

Nova Notes

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



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**2016-2017 RASC HALIFAX
AGM EDITION
PG.4**

**RASC HALIFAX
FEBRUARY MEETING
PG.16**

**FOOD FOR THE SOUL
PG. 17**

January/February 2018

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, use of the Centre's new Go-To 400-mm Dobsonian telescope and 100-mm binoculars, a warm-room, and washroom facilities.

Enjoy dark pristine skies far away from city lights and the company of like minded observers searching out those faint "fuzzies" in the night. Observing nights (Fridays close to the New Moon or Saturday backup) are open to both members and their guests. If you are not a key holder and would like to become one, or need more information, please contact the SCO Manager, Tony McGrath.

Upcoming Observing Nights:
March 17 (alt 18)
April 13 (alt 14)

Meetings usually begin at 8:00 p.m. at Saint Mary's University in Room 101 of the Atrium Building (AT).

All meeting locations and presentations subject to change

Meeting Dates for 2018/19

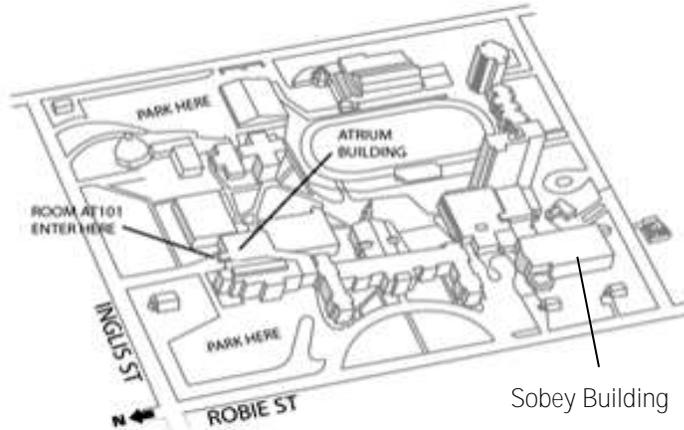
Friday, March 16
Friday, April 20
Friday, May 11

Meeting Location:

Saint Mary's University

Atrium Building (AT)
Room AT 101

The Atrium is located in front of the Patrick Power Library, between the Burke Building and Science Building.



Meetings are usually held on the third Friday of the month, except for the months of July and August.

Executive meetings begin at 6:45 p.m., usually in room AT306, and all members are welcome.

Halifax RASC Board of Directors, 2018:

Honorary President : Dr. Roy Bishop	(Appointed)
President: Paul Gray	(Elected)
Vice-President: Melody Hamilton	(Elected)
Secretary: Judy Black	(Elected)
Treasurer: Gregg Dill	(Appointed)
National Council Rep: Patrick Kelly	(Elected)
Director: Sean Dzafovic	(Elected)
Director: Andrew Frank	(Elected)
Director: Paul Heath	(Elected)
Director: John Read	(Elected)
Director: Charles White	(Elected)
Librarians: Vacant	(Appointed)
SCO Manager: Tony McGrath	(Appointed)
Observing Chair: Sean Dzafovic	(Appointed)
Outreach Chair: Paul Heath	(Appointed)
Nova Notes Editor : Charles White	(Appointed)

Cover Photo By:

Dr. Roy Bishop "The Heart of the Milky Way"

A 10-minute exposure on Kodak Elite ISO 200, 35-mm film (old technology!), 50-mm, f/2.8, at Hale Pohaku, at the 2.8-km level on Hawaii's Mauna Kea, manually tracked on an improvised equatorial mount, 2002 April 8. From left-to-right may be seen: M22, M25, M28, M16, M17, M18, M24, M8, M20, M23, M6, the Dark Horse (hind quarters: Pipe Nebula), M9, M19, M62, Barnard 44 and 45, M107, Antares, M4, M80.

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From the Editor — Where to begin, first impressions only happen once and I wish to start off, to you the readers, on the right foot. Perhaps the right page would be the better word in this instance? I believe however, the only place to start would be to thank Tony Schellinck for his years of editing this great publication. Tony is involved in some great outreach programs and I cannot wait to hear more about his successes in teaching astronomy. Thanks again Tony!

I joined the RASC Halifax two years ago this June, but I've been a passionate fan of astronomy since I was young. I had books upon books, and somewhere within my possession I should still have a VHS recording of the Nature of Things talking about human exploration of space and what it would take to visit Alpha Centauri. I'm sure it predicted that we would be back to the Moon or on Mars by now, but I digress.

What brought me into the RASC was public outreach events. Most notably, Nova East. My family would plan to go down to Smileys Provincial Park for the week so that we could take part in the public sky tours and such like. Events like those make lasting impressions and encourage people to look up! I now record sun spots for the AAVSO, do outreach working on the road and am currently working on the Explore the Universe Certificate.

Clear skies!
- Charles White



▲ Just because I'm working on the road, doesn't mean I cannot enjoy the stars! (Photo: Charles White)

AGM 2017 Edition

This edition of Nova Notes will focus mainly on the various reports and updates from the Board of Directors and acting heads of the committees within the RASC Halifax Centre. Work on the March/April edition of Nova Notes will begin in earnest. Please feel free to send along your articles, pictures, astrophotography and any other relevant content at any time!

- Charles White

Nova Notes: The Newsletter of the Halifax Centre of the RASC

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

The deadline for the next edition is April 16th 2018.

The opinions expressed herein are not necessarily those of the Halifax Centre.
Articles on any aspect of astronomy and related activities will be considered for publication.

Halifax Centre's AGM and Members' Meeting

Judy Black

On Friday, December 8, 2017, RASC Halifax Centre held its Annual General Meeting. Officers and Committee Chairs provided their annual reports to the 27 members in attendance. Members were informed that going forward the "Council" is now the "Board of Directors" and that the approved Bylaw #1 (2016) is now enacted and that the elections of the Executive and Directors of the Board were being conducted in accordance with Bylaw. They were reminded that no less than 5 but no more than 10 directors could comprise the Board. The following Board members were elected by acclamation:

Executive:

- President: Paul Gray
- Secretary: Judy Black
- National Council Representative: Pat Kelly
- Vice President: Vacant*
- Treasurer: Vacant*

Directors:

- Melody Hamilton
- Sean Dzafovic (Acting Observing Chair)
- John Read
- Paul Heath (Acting Outreach Chair)
- Andrew Frank
- Charles White

Paul Gray, requested that members should consider either volunteering or nominating someone for Vice-President or Treasurer.

Paul Gray and Dave Chapman, as part of *What's Up?*, informed members of the recent revisions made to the *Explore the Universe Guide*, such as sky charts and a map of the moon. He requested that any member wishing a copy should contact him and he will place a bulk order.

Dave Chapman also mentioned that an informal night at SCO was being organized, weather permitting, for a viewing of the Geminids on December 13/14. He offered to bring hot chocolate and others who planned to attend were invited to bring snack foods. A call will be made on Tuesday



evening through the Announce List as to whether or not the observing night was to be held.

Dave Chapman, as the Guest Speaker, addressed "The Unusual Moons of Early 2018." He explained how we can have two full moons in one month. The long-term average of the synodic period of the moon is 29.53 days, and that months with 31 days are three times more likely to have two full moons than 30-day months. That meant that February would have either one or no full moons. How often does this happen? Looking at dates of its occurrence in years past - 1961, 1980, 1999, 2018 - it appears to happen every 19 years. The future occurrence is therefore in 2037. He referenced page 125 in the 2018 *Observer's Handbook*.

Dave also noted that "calendars" are not astronomy based but that they were religious or political instruments. They were in essence developed by humans, our "bosses", telling us what to do and when. For instance, the Caesars (Julius and Augustus in particular) adjusted the number of days in a month to suit their political needs by removing a day from February (which was then the last month of the year).

He also made comparisons on the apparent size if the moon was compared to pizza - small, regular and large. The small pizza was 7% less than the regular and the regular was 7% less than the large "Super pizza!" The use of the word "super" should not be used in reference to these perigees, and that members should discourage its

(Continued from page 4)

use in any outreach conducted. In answering questions from the audience, he noted this was not the same as the confirmation bias observed as the moon rose above the horizon, and there isn't any significant evidence to suggest these perigees were related to an increase in earthquakes.

The meeting portion of the meeting adjourned for members to enjoy special Christmas cookies

and beverages provided by Pat Kelly and a fruited ring cake by Judy Black.

***Editor's note:** Since the 2017 AGM Board of Directors Election, the positions of Vice President and Treasurer have been filled by Melody Hamilton and Gregg Dill respectively.

2016-2017 Annual Report: First Vice-President

Paul Gray

Well, 2017 is almost history. Along with another successful Nova East we have had another busy year in the Halifax Centre. I am writing this as 1st VP but have spent the year acting as your President as we had a vacancy in that position. I enjoyed the extra time as in the role as President with the presiding over meetings and working with the great team on our executive. Not enough praise can be said about the great team of people we have in our Centre. Many thanks to them all!

Nova East was a huge success once again. A nod of thanks and round of applause to Judy Black and Melody Hamilton for co-chairing the great event! With over 60 people in attendance and good weather even though the skies were not perfectly clear, we had a good time with great talks, food and time with fellow sky watchers.

Nova Notes has been a great asset to our Centre and Tony has done great work in seeing it produced. However, Tony has decided it is time to let someone else take charge of *Nova Notes* and so we are seeking a volunteer who might like to tackle our newsletter. Should you be interested contact one of us on the executive.

Other changes coming in the New Year also include us switching to our new bylaws and a Board of Directors. With that project behind us, thanks to the lead of Judy Black, we now need to refocus our club and direct our energies into new goals. One of these is the long overdue update of our club's website. If you have any web based skills and would like to help out by setting up the site or simply helping add the content contact us.

Another is to do an upgrade to the St. Croix Observatory, mainly a power upgrade but there are other ideas too. Stay tuned to see what we plan and how you can help out.

As a whole, we had a very busy and good year with a full slate of speakers for 10 monthly meetings plus numerous outreach events. We have a very active Centre with many knowledgeable members. We are very fortunate in this way and I encourage all members to come out to events to take advantage of our great Centre.

Clear skies,

Paul Gray, 1st Vice-President
RASC, Halifax Centre

2016-2017 Annual Report: Secretary

Judy Black

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

There were 8 Council Meetings in 2016-2017 which usually occurred during the hour before the Centre Meeting. Members are welcome to attend Council meetings if they wish. There were no Council meetings held in June, July and August. There were 7 regular Members' Meetings along with the informal gathering at the Annual BBQ held in June 2016. All Members' Meetings had a guest speaker. Some of the highlights included the May musical presentation by RASC Historian Randall Rosenfeld, the youth presentations in April and November, the September update on members' summer activities (at the solar eclipse, Starmus, Nova East and the August Kejimkujik Dark-Sky Week-end) and SMU's MacLennan Lecture that replaced the October meeting. There were minimally 3 reminders of meeting for every Council and Members' Meeting held.

Motions were made with a quorum of the Council 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:

Budget adjustments:

- Up to \$1000.00 be provided for purchase of the parallelogram mount for the Thurlow binoculars at SCO
- Up to \$600.00 for purchase of new books for the library;
- Up to \$1000.00 towards RASC Halifax Centre participation in two Kejimkujik Dark Sky Week-ends (August and September)
- Up to \$425.00 be set aside for production and mailing of *Nova Notes*;
- Up to \$250.00 for purchase of a RASC, Halifax Centre banner and base;
- Increased budget for Nova East Prizes from \$500.00 to \$1000.00;
- Up to \$299.00 for the purchase of a replacement

laptop for the Centre;
\$165.00 for Halifax Centre production video; and
\$100.00 for annual thank you gift to
Jamie Carmichael.

Bylaw #1 (2016) amendments:

- Approved by Council prior to presentation and approval by Members Nomination of Paul Heath for the RASC Qilak Award (which he subsequently won)
- Treasurer to acquire a tax accountant to assist with the T2 submission to CRA.
- Halifax Centre would donate the Unihedron Sky Quality Meter of RASC Halifax Centre to Tim Doucette's Deep Sky Eye (DSE) Observatory.

RASC Halifax Centre Bylaw #1 (2016):

Requires that members are advised of the make-up of the membership of the Centre which as of the September 30 totaled 172 members (up from 167 last year):

- 15 Regular Family
- 127 Regular
- 5 Family Youth
- 3 Youth
- 20 Life
- 1 Regular International
- 2 Regular USA (New York, Massachusetts)

I had the continuing honour of acting as Chair of the Bylaw Review Committee that was formed in April 2016. The RASC, Halifax Centre Bylaw #1 (2016) had been approved at the 2016 AGM; however, a few required adjustments were approved by Special Resolution at the February 2017 Members' Meeting and subsequently approved by the Registry of Joint Stock Companies.

Council position descriptions, drafted in 2016 and revised in 2017 to reflect changes made in Bylaw #1 (2016), were approved at the November 2017 Council meeting. They will be posted on the Centre's website and will be included in the RASC Halifax Centre's Council Policy & Procedure Manual. Development of this manual should be completed in 2018.

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This was my second year serving as RASC Halifax Centre Secretary. I would like thank Halifax Centre members and the Council for their invaluable support over the past year. It has been an honour working on your behalf.

Respectfully Submitted,

Judy Black, Secretary
RASC, Halifax Centre

2016-2017 Annual Report: Treasurer

Jim Millar

The year 2016/17 was another financial success for the Halifax Centre. We had an operational deficit of over \$1,314 before depreciation and write offs. In previous years our surplus was usually provided by the income from Nova East. This year it was decided to run Nova East at break even or a small deficit. We ran a deficit of \$432. We also continued to write off our equipment at approximately 3%. We did not upgrade the library this year and wrote down its value by about \$200. We should continue to upgrade the library in the new year.

Deficit of \$2042.230 for Fiscal 2016/17:

The Centre continues to be successful and solvent. The deficit was planned as we were accumulating too much each year for a non-profit organization. We are holding our own with membership and Nova East continues to be successful. We continue to follow good accounting procedures by depreciating our assets over time. We continued to invest in the St. Croix Observatory.

Details of the 2015 Income Statement

REVENUE:

Membership Fees \$2976.45: We had a slight increase in membership fees this year. At year end we had 170 members, up from 167 the previous year. Total income was up only slightly because we had more family memberships.

Donations \$73.24: We received only small donations this year.

Educational / Outreach: We had no revenue in this category this year as we did not hold the NOVA program.

Interest \$132.63: Interest on our investments was up a bit. Interest rates continue to be low.

Sales of Merchandise (Gross) \$914.68: These were mainly RASC calendar and sales of star finders to the Friends of Keji for sale in their shop.

Nova East (net) (432.35): We planned for a break even for Nova East this year. We came close. We significantly increased the number and value of prizes that were given out this year. We should continue to try and break even in future years.

Printed Nova Notes Subscriptions \$204: This is what printed newsletters earned this year from members subscribing to hardcopy. We had fewer members (5) wanting printed copies this year.

EXPENSES:

Meetings \$330.65: Pat Kelly did well to keep treat spending down again this year but he missed a meeting and his replacement bought a little more than usual. He continues to provide a nice variety of treats for our meetings.

Newsletter \$455.45: NN's expenses are up this year. This is caused by increased postage and printing costs. We are now subsidizing each issue by about \$6, up from \$5.

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Cost of Goods Sold \$225.82: This is down this year as we paid for our calendars in the previous fiscal year.

Equipment and Supplies \$79.22: The cost was not significant enough to add to our capital equipment.

Office Administration \$336.80: Costs were a little lower this year. The secretary did less photocopying.

Educational Activities (Outreach) \$1455.10: This is like previous years. The Keji Dark Sky Weekend continues to be a large portion of these expenses but we had two this year and our overall spending for the year was not higher than last year.

Insurance \$1,251.00: Insurance for SCO was up a further \$20 in 2016.

Awards and Donations \$128.83: We continue to donate to the Clear Sky Clock website and the International Dark Sky Association.

Observatory - Operating \$507.10: This includes the usual gift to Mr Carmichael. A BBQ, some propane, and the odd item. It also includes taxes to Hants County.

Asset Depreciation \$727.99: We continue to depreciate equipment at 3% per year and library books at 10% per year.

Miscellaneous Expenses \$12.50: This was for minor purchases.

Details of the 2015 Balance Sheet

ASSETS:

Cash \$3,018.58: This is the balance in our chequing account less uncashed cheques. We also had \$272.50 in accounts receivable for September membership fees owing from National Office.

Merchandise Inventory \$161: There is only a small change in inventory this year. We sold all our calendars and some more Mylar filter material.

Investments \$16,062.98: This is now the value of the principle in our investments. We now have four GICs that come due throughout the year and interest is only counted at maturity.

Estimated Library \$1,778.19: We did not spend anything on new books this year. We should continue to upgrade the library in future years.

Observatory Equipment \$11,825.88: After depreciation of observatory equipment of \$319.06, the sale of the 17.5-inch telescope and the purchase of the parallelogram and mount for the Thurlow binoculars.

LIABILITIES:

Accounts Payable \$620.70: This is for bills for *Nova Notes* received and bills received after year end.

EQUITY:

Nova East Reserve Equity \$5,000.00: This reserve is capped at \$5,000.00.

Common Equity \$27,818.48: Common equity fell by \$2,04223 from 2015/16. This is explained by the operating loss for the year.

Summary and Recommendations:

I was pleased to serve as Treasurer again this year. Unfortunately, demands on my personal life mean that I will not be returning next year. I will be available to help the new Treasurer transition into the job.

Respectfully submitted,

Jim Millar, Treasurer
RASC, Halifax Centre

Royal Astronomical Society of Canada, Halifax Centre
Comparative Income Statement
Years Ending September 30, 2016 and September 30, 2017

	Years Ended September 30		Amount of Increase or (Decrease) during 2017
	2017	2016	
Revenue	-\$2,042.23	Deficit	
Membership Fees	\$2,976.45	\$2,901.05	\$75.40
Donations	73.24	1,000.00	(926.76)
Educational Activities	-	-	0.00
Interest	132.63	80.24	52.39
Sales of Merchandise	1,140.50	1,275.00	(134.50)
Nova East (Net)	(432.35)	1,815.32	(2,247.67)
<i>Nova Notes</i> Print Subscriptions	204.00	289.29	(85.29)
Total Revenue	\$4,094.47	\$7,360.90	(\$3,266.43)
Expenses			
Meetings Treats	\$330.65	\$244.57	86.08
Guest Speaker	\$454.48	\$-	454.48
Newsletter	455.45	309.13	146.32
Depreciation and write offs	727.99	587.03	140.96
GA 2017	116.68	179.62	(62.94)
Equipment and Supplies	79.22	442.35	(363.13)
Cost of Goods Sold	225.82	1,175.87	(950.05)
Office Administration	336.80	484.26	(147.46)
Educational Activities	1,455.10	1,416.45	38.66
Insurance	1,251.00	1,231.00	20.00
Awards and Donations	128.83	203.73	(74.90)
National Office Processing	55.08	54.24	
Operating Expenses Observatory	507.10	636.00	(128.90)
Miscellaneous	12.50	75.00	(62.50)
Total Expenses	\$6,136.70	\$7,039.25	(\$902.54)
Operational Surplus (Deficit)	(\$2,042.23)	321.66	\$(2,363.89)

2016-2017 Annual Report: Auditor

Gregg Dill

To the members of the RASC Halifax Centre.

I have examined the financial records for the period October 1, 2016 to September 30, 2017. I believe that the Balance Sheet prepared by the treasurer presents an accurate account of the financial position of the Centre as of September 30, 2017.

I have also looked closely at the Income Statement, the Report of the Treasurer, and the substantiating records and receipts and have not found anything of major concern. I have not checked every transaction or receipt but most of them.

Recommendation:

1. That the board entertain a motion to require cheques and other documents be signed by two of at least three people registered to have signing authority.

Respectfully submitted,

Greg Dill, Auditor

2016-2017 Annual Report: National Council Representative

Pat Kelly

Most of the National Council's work is done through its committees. Committee chairs and membership are normally re-structed at the General Assembly at the meeting following the Annual General Meeting. This did not happen this year as the board wanted to review the committee structure and decide where the society's priorities lay and to see if the present committee structure best met those aims.

The national council has not met since then, but there is a meeting set for December 10, 2017 which will not occur until after the deadline for the submission of this report. Some items on the agenda include: membership fees, Centre involvement in the Centre's Manual (a guide for running Centres), the previously mentioned items (Committee objectives, Committee activity and succession planning), and the future of General Assemblies.

I would encourage everyone to log in to the members' section of the Society web site and look at the reports of the various committees. If you would like to contribute, contact the chair of the committee with an offer to volunteer!

Respectfully Submitted,

Patrick Kelly. National Council Co-Chair
RASC, Halifax Centre

2016-2017 Annual Report: Observing Chair

Sean Dzafovic

Congratulations to the Halifax Centre members who completed RASC Observing Certificates this year:

- Melody Hamilton – Deep Sky Gems
- Tony Schellinck – Explore the Universe
- Judy Black – Explore the Moon (Binocular)

Halifax Centre members also successfully completed Astro-Imaging Certificates this year:

- Tony Schellinck – Wide Field
- Tony Schellinck – Solar System
- Tony Schellinck – Deep Sky
- Dave Chapman – Wide Field
- Art Cole – Solar System
- Jeff Donaldson – Deep Sky
- Michael Gatto – Wide Field
- Blair MacDonald – Deep Sky

Halifax Centre members are also active participants in observing programs for other organizations. Mike Boschat received a certificate from the American Association of Variable Star Observers (AAVSO) for his 3000th sunspot observation since 1999.

Clear skies,

Sean Dzafovic, Observing Chair
RASC, Halifax Centre

2016-2017 Annual Report: Nova Notes

Tony Schellinck

Five issues of *Nova Notes* will be published this year, with a range of 12 to 24 pages per issue, 76 pages in total. There were seven regular contributors to *Nova Notes* this year: Dave Chapman, Art Cole, Paul Heath, Jim Millar, Matt Payne, Chris Young and myself. I would like to thank them all for their timely submission of interesting and well written articles. They made my job as editor much easier.

Nova Notes also benefitted from the submission of special articles written by: Pat Kelly, Judy Black, Melody Hamilton, Blair MacDonald, Roy Bishop, Paul Heath, Wayne Mansfield, Tony Schellinck, John Read, Gillian Webster, Michael Boschat, Dave Chapman, and David Lane (first four issues).

Several other RASC Members agreed to have their photographs printed on the front page of the issues: Art Cole, Karl Hudson, Blair MacDonald and David Chapman. There were 82 photos and illustrations inside *Nova Notes* over the first four issues. I believe photos and illustrations liven up each issue so I would like members to continue to submit photos with their articles or take photos at events and meetings to share with all.

Each issue was thoroughly edited before release by Pat Kelly, Michele Arenburg and Heather Schellinck. Pat Kelly posted the issues promptly on the Halifax RASC site when submitted to him and he has maintained the *Nova Notes* archives on the site. Judy Black put out the notification to all Halifax RASC members that the issue was ready. Paul Gray displayed the latest issue of *Nova Notes* at the next available RASC meeting to in order to promote readership. As you can see I am just one member of a very large team dedicated to producing a quality issue five times a year.

I mailed out about 15 copies per issue.

Finally, I would ask that when the Centre updates its web page I would like it to add the functionality of being able to track NN downloads or reading of the NN on the website.

Respectfully Submitted,

Tony Schellinck, Nova Notes Editor
RASC, Halifax Centre

2016-2017 Annual Report: Nova East Star Party

Melody Hamilton and Judy Black

This year the 31st Nova East was held on the weekend of July 28th to 30th at Smileys Provincial Park. Many thanks to those who participated and helped organize this event. There were 35 camp sites reserved and 49 registrants.

Judy and I would like to offer special thanks to the presenters: Pat Kelly, Kathy Walker, Dave Chapman, Andrea Misner, Matt Paine, Tony Schellinck, and John Read. Field presenters were Paul Heath and Tony Schellinck. We would also like to mention and thank the organizing committee: Roy Bishop (consultant), Chris Young, Paul Gray, Jim Millar, Dave Chapman, John Read and Irene Moore.

The weather was mildly co-operative with showers on Friday evening, but by the time Pat completed his tour of Jupiter's satellites, the skies cleared and we had a couple hours of observing. Paul took us on a sky tour with his green laser and then Tony pointed out specific objects to view with binoculars.

Saturday was sunny and warm, a perfect temperature for the talks and events throughout the day. Saturday evening clouded over but did not adversely affect the comradery of our enthusiastic group of Nova East attendees. Thanks to Chris Young, Paul Gray, and Bruce Hamilton for preparing the astronomer's breakfast of pancakes and sausages. The BBQ was also a great and delicious success!

Thanks to Paul Gray for organizing the potluck and barbecuing the beef roast and Italian sausage, and to everyone who brought their own contributions to the potluck.

We would like to thank the participants of the Nova East Astrophotography contest (7 submissions this year!) and to thank Allen Sutherland of Atlantic Photo Supply (standing in for Brian Giffin) for donating the prize of a framed photo of the winning entry. Congratulations to Jerry Black for his winning submission of the Turret Arch in Arches National Park, Utah. Thank you to our esteemed adjudicators: Mary Lou Whitehorne, Blair MacDonald, and Allen Sutherland.

There were numerous door prizes this year acquired by Chris Young and John Read. The main prize was a 130 mm Newtonian Telescope, donated by Atlantic Photo Supply, and was won by David Hoskin. As Saturday evening progressed, the clouds moved in and closed off our viewing opportunities.

New this year to pass on to the Organizing Committee for Nova East 2018:

- A "Terms of Reference" for the committee including accountability, authority, chair appointment and responsibilities, committee membership, meetings, quorum, and term limits.
- A summary of recommendations regarding recurring events, some general recommendations, health and safety, an inventory of utensils, a food inventory list and an action list.
- A Nova East task chart that has a timeline of items to be planned, who is responsible, and the associated tasks required for the planning of a Nova East Star Party.

Nova East 2017 was a fun weekend and Judy and I hope that many of you will be able to attend the 32nd Nova East that will be held next year on the weekend of August 10th to 12th, 2018.

Income Statement Nova East for Period Covering 01/10/2016 to 30/09/2017

Revenues:

Nova East Income	\$0.00
BBQ	\$25.00
Camping	\$630.00
Miscellaneous	\$0.00
Registration	\$1,350.00
T Shirts	\$650.00
Total Revenue	C\$2,655.00

Expenses:

Nova East	\$0.00
BBQ	-\$233.77
Camping	-\$227.95
Miscellaneous	-\$1,156.68
Nova East Prizes	-\$994.97
T Shirts	-\$473.98

Total Expenses:
\$3,087.35
Net loss for period:
\$432.35

Clear Skies,
Melody Hamilton / Judy Black
Co-Chairs, Nova East Planning Committee 2017
RASC, Halifax Centre

2016-2017 Annual Report: Outreach

Paul Heath

Once again, we have had a busy year at outreach events. First I would like to thank everyone who stepped up to cover events while I was in Hospital and recovering., especially Wayne Harasimovitch for covering HalCon and leading the inside event at Discovery Centre for the eclipse.

The eclipse was of course our biggest event. In Halifax at the Discovery Centre, we had 970 inside, and just over 500 outside for the partial eclipse. Also had 7 media interviews as well as others around the province holding viewing sessions. Blair, Art, and Mary Lou's daughters held observing at their work places. Wayne and Carsan at the Liverpool water front saw over 100 attending. Roy at Avonport and Bruce and Melody at Annapolis Royal also held viewing sessions. There were those who chose to 'stand under the shadow' and went to Nebraska, Kentucky and Wyoming. Paul Gray joined us by phone at the Discovery Centre from his viewing site in Nebraska.

A number of our volunteers have stepped up their game and ventured into new outreach events connected to the communities they are in. Chris Turner and Jeff Donaldson led community observing sessions. Melody and Bruce Hamilton led an event for Glooscap First Nations, Acadia Night of Light, Spring Solstice at Fort Anne and the eclipse at Annapolis Royal. Tony Schellinck's continued his DSO with binos, the indoor theatre program he has been doing at the Astor theatre in Liverpool along with his bino table at major outreach events. Tony also teaches an intro astronomy class for SCANS, helped with Privateers Days in Liverpool, HalCon, library talks, Keji Dark-Sky, Keji Seaside, White Point Lodge, a Boxing Rock event Nova East and the Halifax Planetarium. Another busy year for Tony. Wayne

Mansfield also helped with events at the Liverpool waterfront and Keji Dark-Sky.

It is very rewarding to see outreach continue to spread throughout Nova Scotia.

Our members helped with planetarium shows. Quinn Smith, Chris Young, Pat Kelly and Tony Schellinck presented 27 shows to almost 650 people! Thanks to Stephen Payne of the Dalhousie Department of Physics and Atmospheric Science for supplying these numbers

Many of our events this year were repeats of past events, our success stories. Dave Chapman again organized the Keji Dark-Sky weekend as well as a September Fall For the Stars event at Keji. Dave led the development of a 'How to video' for our star Finders with the help of Andrea Misner and Halley Davies. A great project.

Saltscapes and the APS sidewalk events were also very successful again this year. Chris Young helped YNC with their astronomy talk and observing session and Rob Thacker held a talk for the Shubenacadie Wildlife park.

Despite being in hospital and extended recovery time, I have been again very busy with outreach this year. I am again the RASC board member for YNC and organized a talk and observing session for them. Thanks again to Chris Young for filling in for me. While recovering, I led a 6 week astronomy course for THRIVE Education. Saltscapes was again a busy and successful event. I also did three talks for the Gr. 2 and both Gr. 6 classes at Grosvenor Wentworth Elementary, and helped with Nova East, the Keji Dark-Sky weekend, the MacLennan lecture, and had a great InOMN at Bishops Landing. I helped organize the eclipse event at Discovery Centre

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and did 7 media interviews for the event.

The GA in Ottawa was my most memorable event as I received the Qilak Award for outreach and education. Also, as the Halifax Centre Representative, I got to see the inside workings of RASC at the national level.

The Halifax Centre can be proud of its outreach again this year. We participated in the following: library talks, school presentations, park presentations, youth group talks, outreach events (InOMN, Privateers Days on Liverpool waterfront, 2 Keji Dark-Sky events, Nova East, Saltscapes, APS sidewalk), Introductory Astronomy classes both classical (SCANS) and student (THRIVE), and supported local astronomy venues with BGO and Planetarium talks. Members also did astronomy presentations in support of other groups events.

Overall, between October 2016 and September 2017 the Halifax Centre created over 5,200 Galileo moments. A tremendous effort from all the outreach volunteers! My sincerest thanks go out to all the Halifax Centre members that helped with these outreach events. This of course does not include all the times we set up our telescopes to show neighbors, friends and family the night sky, because that too is outreach.

Again, many thanks to all who helped support our outreach events over the past year. Let us continue to show the night sky to any and all who 'look up and wonder'.

Respectfully Submitted,

Paul Heath
Outreach Chair
RASC, Halifax Centre

2016-2017 Annual Report: St. Croix Observatory

Tony McGrath

SCO continued as a centerpiece of observing activity for the Centre. A number of targeted events were held:

BBQ – A BBQ social was held at SCO in June to encourage use of the facility and give new members and guests an opportunity to meet and talk and learn more about the facility, its resources and how to access it. The event was well attended.

Annual Maintenance Work Party – The annual work party saw a major clean-up of the roll-off observatory, warm room, storage shed and grounds.

406mm Go-To Newtonian – The telescope continues to be a popular and useful addition to SCO. Quite a number of observers have been introduced and a number of sessions were held throughout the year.

Current Initiatives

- Any inventory of equipment held at SCO as well as Centre-owned equipment in general, was started this year. The inventory is effectively complete, however the format and place in which to hold the information is not settled. The plan is to assign an inventory card to each piece of equipment so that a catalog can be built and used. This will be completed in an electronic format and kept by the SCO manager. The opportunity to put this on the Centre web site exists, however no plans have been made on how to implement this.

- Discussion continues to occur around upgrades at SCO. Two concepts are being considered:

Electrical Upgrade:

- Current situation (no pun intended): a review of the facility has pointed out the need to upgrade the electrical. Primary considerations are;

1) Voltage Drops – Voltages at the outlets in the roll off experience large voltage drops when in

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use. While it is acceptable for powering lighting and electric dew removal equipment, the existing distribution is useless for powering telescope electronics. The voltage drops arise due to a combination of small wire sizes which are installed, as well as the long runs from the fuse blocks in the warm room to the outlets in the roll off.

2) No 120 Vac Power in the Observatory – Currently there is no 120 V power in the roll off. Recommendation – proceed with detailed design and budget preparation for new installation.

Steel Telescope Pier – Installation of a steel telescope pier outside the observatory adjacent to the existing telescope pads. The intent is to provide a pier which will accept a number of common telescope mounts such that it could be used with the Thurlow binoculars as well as owner supplied mounts.

Equipment Disposal:

Several items of equipment which were determined to be surplus were removed from SCO. In particular: Skywatcher 114-mm Newtonian and EQ-3 Mount – this telescope was retired and sold.

Equipment Additions:

The following items were added to the Centre inventory:

Telrad Unit Power Finder – The Telrad was determined to be the most appropriate finder for use on the Thurlow binoculars and one was acquired and install for use.

Binocular Parallelogram Mount – The mounting and tripod for the Thurlow binoculars received a major upgrade with the acquisition of a substantial parallelogram mount. The new mounting and tripod are a major improvement and make the use of the binoculars in a group setting a much more efficient process.

Equipment Repairs:

Eye Pieces for Thurlow Binoculars – The binoculars have eyepieces which are a “press fit”. At times the installation and removal of these eyepieces present some challenges. During the course of the year, one of the eyepieces was damaged when the rubber eyecups was separated from the eyepiece. Repairs were made and the unit returned to service. It is easy to see have this could occur, and will likely occur again, efforts are being made to solve the root cause.

Energy Systems:

There are two sources of energy at SCO, a Photo Voltaic system for electricity and propane for heating.

- Electrical – nor major problems were reported for the system. It is worth noting that the system is somewhat limited in capacity, and is primarily used for site lighting and convenience power.
- Propane – two 11.3-kg cylinders of propane were consumed.

SCO continues to fulfill a very worthwhile function for the Centre membership. It remains this way because of the efforts of a number of dedicated people who graciously volunteer their time and talent. On behalf of the Centre, I would like to extend a heartfelt thank you to those contributed to SCO operations and activities throughout the year, and look forward to their continued support in maintaining this most valuable asset.

Respectfully submitted,

Tony McGrath, SCO Manager
RASC, Halifax Centre

Editor's note: *This concludes the 2016-2017 annual reports. Thanks to the authors and Judy Black for compiling all this information and sending it along.*

RASC Halifax Centre, February Monthly Meeting

Tony Shellinck

Paul Gray, President of the centre opened the meeting at 8 pm. Paul Heath provided an update on outreach activities mentioning the outreach activities of Tony Schellinck, negotiations with the Deanery, and a session for 5-6 graders at Park West. He then announced that he expected to publish his book of poems *Food for the Soul* next month. He thanked Dave Chapman and Charles Innes for their assistance in creating the book.

Sean Dzafovic then gave a “what is up” talk. If you want to view planets this month then the best time is 4:30 am to 7:30 am. There are no bright media showers or bright comets this upcoming month. Melody Hamilton added that the zodiacal light will be bright at twilight March 5 onward that month.

There followed several announcements. RASC centre is still looking for a treasurer, RASC calendars were for sale at the meeting for \$10, and several copies of the Explore the Universe books were still available for pick-up and sale. Nova East is taking place August 10 to 12 and the

organizing committee was going to meet the next day.

Dave Chapman then introduced Halley Davies who, working with Dave, filmed and edited a 2:38 video entitled *The Magnificent Sky – A Weekend at Kejimikujik Dark-Sky Preserve*



(<https://www.youtube.com/watch?v=zJ4bq-Um1xU&feature=youtu.be>) that has been posted to the centre’s YouTube channel.

This film captured the activities and the participant’s excitement during the eighth annual Dark-Sky Weekend held at Kejimikujik National Park. Halley explained the process of creating the video by combining nighttime dimly lit video with daytime interviews and astroimages supplied by centre members. All those involved in the project are listed below.

- Produced by RASC Halifax <http://halifax.rasc.ca/>
- Created by Dave Chapman, Halley Davies <https://www.halleydavies.com/>
- Astrophotography by Art Cole, Martin Hellmich.
- Time-Lapse Photography by Jerry Black.
- Music: "Awakening" <http://www.hooksounds.com>

Special thanks to Keji staff and RASC Halifax volunteers. Dedicated to the Mi'kmaq First Nation.

Master astrophotographer Blair MacDonald gave a presentation entitled *Astrophotographer's Skies, Summertime Imaging*. He introduced the audience to his cottage on the Mira River in Cape Breton where he spends many a clear night in the summer months taking photos of the night sky.

We were treated to a great variety of astrophotos, accompanied by the stories



▲ Screen capture of “The Magnificent Sky” title roll. (Photo: Tony Shellinck. Video: Dave Chapman, Halley Davies.)

► Screen capture from “The Magnificent Sky, showing public outreach. (Photo: Tony Shellinck. Video: Dave Chapman, Halley Davies.)

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surrounding their creation. Blair kindly answered questions concerning the creation and editing of these photos for those in audience interesting in taking their own photographs. It should be noted that Blair has been providing a 45--minute beginner class in astrophotography prior to the regular meetings for several months now.

Paul Gray closed the meeting with a preview of a Russian movie *Space Walker* which will be shown at the next meeting.

There followed about half an hour of social time fueled by drinks and sweats.

Ideas for Nova Notes

Charles White

I would like to open up the floor to the members of the RASC Halifax, and ask for your ideas and opinions of what the Nova Notes should have within its covers.

To go along with the great articles that the regular contributors provide for each edition of Nova Notes, I've always been fond of the notion of putting in a collage of astrophotography that the members have taken between publications, regardless of experience or equipment. Just a showcase to share our works amongst friends.

Another possible idea, articles relating to sketching, and recording our observations for those of us (myself included) who do not always take photographs of what we are looking at.

Or, perhaps an ongoing article series on RASC Observation Certificates? How best to approach a particular object that is required or what will be visible in the months following a publication.

Again, I encourage everyone to think about what they would like to see in Nova Notes and reach out! I'm looking forward to hearing from you.

- Charles White

Food for the Soul

Paul Heath

Waves

Tiny ripples, gentle rush upon the sands
Faint gurgle absorbing waters unwashed fills the sand

Winds tiny touch gentle upon the skin.

Fast ripples, bouncing heat and flickering from rippled sands

Warmth and flashes rest on hand and mind
Lights hot touch flickers upon the skin.

Soft ripples, quiet gurgling sound
Up from the rippling sand fills our ears and mind
Sounds vibrant touch quiet upon the skin.

Long ripples, slow up from the ground
Vibrations faint motion shakes inside the bones and mind

Earths motions touch vibrates upon the skin.

Fierce ripples, streak from out the stars
Bent and twisted mixed by sky and earth strike upon the mind

Star ripples touch rapid upon the skin.

Dying ripples, burst from end of days
Stretched by distance not slowed by time seep into the mind

Stars death touch settles upon the skin.

Waves seeking out their creations
Fast and slow through space and time
Until their touch seeps gentle upon the mind.

By Paul Heath