



THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA



ANNUAL REPORT
RAPPORT ANNUEL

2018

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Note: The complete Annual Report is available on-line at:
www.rasc.ca/annual-report-2018-extended

The extended version includes the following:

- 2018 Annual General Meeting Minutes
- 2018 Annual Reports from Centres
- 2019 Award Winners
- 2019 Centre Addresses and Executives
- 2019 National Council
- 2018 Donations

Front Cover Photograph:
Murray Paulson, Edmonton Centre

Produced by James Edgar
Layout and design by Catherine Berry

ROYAL ASTRONOMICAL SOCIETY OF CANADA—2018

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RASC eStore: <http://secure.rasc.ca/RASC/Store/StoreMain.aspx>
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Marketing Co-ordinator: Madison Chilvers mempub@rasc.ca
Youth Outreach Co-ordinator: Jenna Hinds jenna.hinds@rasc.ca
Fundraising consultant: Lisa di Veto ldiveto@rasc.ca

Officers

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2nd Vice-President: Charles Ennis cuhulain@telus.net
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Heather Laird hlaird@rasc.ca
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Journal Editor: Nicole Mortillaro editor@rasc.ca
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Observer's Calendar Editor: Paul Gray snppgray@gmail.com

2018 - 2019 Committees

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Nominating: Charles Ennis cuhulain@telus.net
Observing: Dave Chapman dave.chapman@ns.sympatico.ca
Publications: Robyn Foret arforet@shaw.ca

Centre Representatives on National Council

Belleville:	Don Town	Prince George:	Blair Stunder
Calgary:	Glenn Hawley	Regina:	Ross Parker
	Grace Nelson	St. John's:	Marcellus Redmond
	Judy Sterner	Sarnia:	Alan Kenyon
Edmonton:	Alistair Ling	Saskatoon:	Rob Sheppard
Halifax:	Patrick Kelly	Sunshine Coast:	Mike Bradley
Hamilton:	David Surette	Thunder Bay:	Mitchell Bagden
Kingston:	Richard Wagner	Toronto:	Laila Zichmanis
Kitchener-Waterloo:	Dave Kinjal		Eric Briggs
London:	Mike Roffey	Vancouver:	Hayley Miller
Mississauga:	Jo VandenDool	Victoria:	Nelson Walker
C. F. de Montréal:	Patrice Scattolin	Windsor:	Michael Mastronardi
Montréal:	Frank Tomaras	Winnipeg:	Dennis Lyons
New Brunswick:	Adrien Bordage	Yukon:	Christa van Laerhoven,
Niagara:	Janice Low		Vikki Szohar
Okanagan:	Richard Christie	Unattached:	Randall Rosenfeld
Ottawa:	Karen Finstad		

PRESIDENT'S MESSAGE

The Royal Astronomical Society of Canada marked its sesquicentennial in 2018 with a year long celebration that will be remembered for years to come.

The anniversary came as the RASC continues to grow to more than 5,200 members, most of them affiliated to one of our 28 Centres across Canada. Each Centre actively promotes astronomy among its membership and with the general public, including young people. We are Canada's premier organization of amateur astronomers.

In June 2018, the RASC obtained official recognition in the form of two commemorative stamps issued by Canada Post and a commemorative coin created by the Royal Canadian Mint that includes a piece of a meteorite. The stamps featuring our Canadian skies have proven popular with astronomers and collectors alike, and the anniversary coin sold out within hours of going on sale. Much of the credit for this recognition goes to our Executive Director, Randy Attwood, who persuaded both the Mint and Canada Post to include our 150th anniversary in their 2018 programs.

The RASC had two national star parties in 2018, the first one in January carried live in a nationwide webcast. Members across Canada contributed astrophotos, sketches, and other artwork to the RASC's *Imagining the Skies* website, and early in 2019 an expert panel of judges had the difficult task of choosing winning entries. Members from coast to coast proudly wore our RASC 150 logo on shirts, caps, and other items. RASC History Committee chair Randall Rosenfeld and Board Member Heather Laird created a great set of podcasts on our shared history in RASC.

The RASC's General Assembly in Calgary was made more memorable by a sesquicentennial seminar called *A Shared Sky: The RASC 1868-2018*. The papers exploring RASC history that were presented at that seminar are now being prepared for publication in a book to be published by the Society.

Even more important, the Calgary GA began with an opening ceremony at the Rothney Observatory featuring speakers and dancers from the Treaty 7 First Nations. The RASC's acknowledgement of our First Nations heritage is particularly relevant since I know that many RASC members are working with First Nations from around Canada to learn about how they visualize the skies. This work is a powerful reminder that the history of astronomy in Canada goes back centuries before the first Europeans, Asians, and Africans arrived in North America.

The RASC Victoria Centre and the National Research Council of Canada marked a more recent anniversary in May 2018 at the Dominion Astrophysical Observatory (DAO) on Little Saanich Mountain in the suburbs of B.C.'s capital. The great 1.83-metre Plaskett Telescope at the DAO saw first light 100 years previously, and for a few months in 1918 it was the largest working telescope on Earth.

Peter Broughton, a former RASC President, RASC historian, and active member of our History Committee, added to DAO centennial celebration by publishing his landmark biography of John Stanley Plaskett, the driving force behind the DAO, *Northern Star*. As part of the celebration, the Canadian Astronomical Society / Société Canadienne d'Astronomie (CASCA) held its Annual General Meeting in Victoria with strong participation by RASC members.

Amidst the anniversaries and historical discussions, the RASC is maintaining its focus on the future. Canada is changing, and the RASC must change with it. Late in 2018, the RASC Board of Directors

approved the creation of the Inclusivity and Diversity Committee that has already begun its work of representing and advocating for members who come from non-traditional backgrounds. We must be welcoming to people regardless of where they come from or what their identity might be if we are to continue as a society and if we hope to open more eyes to the wonders of the Universe.

At the Calgary GA we enjoyed a lineup of female headline speakers, including Planetary Society Senior Editor and Planetary Evangelist, Emily Lackdawalla, our Helen Sawyer Hogg Lecturer, Plaskett Medal Lecturer, Dr. Frenshteh Rajabi of the University of Waterloo Institute for Quantum Computing, and Dr. Tanya Harrison of the University of Arizona's NewSpace Initiative.

The RASC in 2018 took a big step forward toward stronger financial sustainability. The previous year, the RASC hired a professional fundraiser, Lisa Di Veto, to bring our fundraising activities into the 21st century. Her work bore fruit with a major increase in fundraising revenues for the RASC that will support our educational, outreach, and research work. We are raising more funds than ever through individual contributions and grants that have allowed our National Office to do a better job of supporting Society activities.

We face many challenges in 2019. We are a Society of volunteers, and our national committees are in need of rejuvenation and reorganization, a task that has become a major focus of work by the Board of Directors. We will have to pay more attention to our volunteer base as the Society undergoes generational change.

Second is our online presence. Our rasc.ca website must cope with major new demands that are being put upon it to serve our members and others who want to learn about astronomy. Our National Office Staff and Information Technology Committee are taking up a major challenge of rejuvenating our website.

Our publications exist in a very challenging environment. As Canada's only popular science publication, *SkyNews* has been a valued membership benefit for RASC members for more than two decades, and in 2015 we purchased the magazine. Now the team that runs *SkyNews* is working with the RASC Board of Directors to ensure that the magazine and the skynews.ca website operate on a sustainable basis. This work will also involve changes to the *Journal of the Royal Astronomical Society*.

Our publications such as the *Observer's Handbook*, supplemented by a United States edition created specially for our American friends, and our *Observer's Calendar*, continue to be widely praised and popular publications, along with the *National Newsletter*, the *Bulletin*, and our *Annual Report*. All depend on outstanding volunteers. We are looking forward to publishing new books such as the upcoming autobiography of one of our most prominent members, David Levy, *A Nightwatchman's Journey*.

As is well known, we RASC members like nothing better than to look up. In 2018, the RASC did just that by purchasing a remote robotic telescope located in the Sierra Nevada Mountains of California and we have been raising funds to get this telescope operational. Our RASC team has made great progress on this telescope, but a great deal more work needs to be done in 2019 to make it available to members and for public outreach. The first images from this telescope already show great promise.

Our 2019 General Assembly at York University will be notable for several reasons. It will be the first GA in more than a decade to take place in the Toronto area. It will be a joint meeting with the American Association of Variable Star Observers, and it will feature

presentations to mark the 50th anniversary of *Apollo 11*'s historic landing on the Moon.

We also anticipate using our growing charitable contributions to enhance our work of bringing the heavens to other Canadians. Our National Office has expanded and opened its archives, and we anticipate even further expansion in the coming year.

Our Centres offer many public activities, some of them through their own observatories. We continue work with national and provincial parks around Canada to develop Dark-Sky Preserves, and

our work of combatting light pollution continues.

If you are not yet a part of RASC, please join us at rasc.ca or drop by one of our many Centre activities. Thanks to our many members and volunteers, we are building on our storied past to create an even more exciting future.

Christopher Gainor, Ph.D.
President

EXECUTIVE DIRECTOR'S REPORT

During 2018, we celebrated the Society's 150th anniversary. Our President, Chris Gainor, has produced an excellent summary of the year's activities in his report. I would like to thank the 150th anniversary working group members for all their hard work in making the celebrations happen: chair Randall Rosenfeld and members Laurie Roche, Heather Laird, June MacDonald, Jim Hesser, Paul Delaney, and Robyn Foret. The 150th anniversary resources are still available on our website at <https://rasc.ca/2018>.

We opened our new History Centre on May 12 with an Open House attended by many Society members and the local Member of Parliament, James Maloney. Many of the Society's priceless artifacts are now on display. The room is very impressive. Plan to visit the office any time you are in Toronto.

The Special Projects and Public Speaker Programs have brought benefits to many Centres. Using donated funds, these programs bring speakers to Centres and finance special projects to improve the ability of Centres to conduct public outreach. Thanks to the Special Projects Program trustees Katrina Ince-Lum (Administrator), Charles Ennis, and Howard Trottier. Thanks also to the Public Speaker Program trustees Charles Ennis (Administrator), Heather Laird, and Bruce McCurdy.

In last year's report, I announced a 150th anniversary fundraising project to acquire a robotic telescope. Early in 2018, the Society purchased a fully operating robotic telescope and hired Paul Mortfield as Program Manager. We formed teams to manage the operation of the telescope, and astrophotography and science programs. Unfortunately, the weather at the telescope's site in California was horrendous over the winter—the clear California weather took a turn to clouds and snow. This delayed training the teams who will operate the telescope to produce all the data for members' use. Paul has done an excellent job building and training the teams. Hopefully, by early summer, we will be able to fully rollout the Robotic Telescope Program to the membership.

Our *SkyNews* crew continues to produce a high-quality magazine that is beautiful and packed full of information every issue. Congratulations to the editorial, production, and marketing team.

Thanks to the hundreds of RASC volunteers who give their time and skills to make the Society a success year after year. This includes members of Centre Councils and Committees as well as Centre members who help run the Centres and their various programs. It also includes members of the various Society committees who

oversee our publications, finances, and other programs that help us fulfill our mandate of public outreach and education.

In late 2017, the Society hired Lisa Di Veto as our Fundraising Consultant. Lisa has brought many talents to the Society and has increased our annual fundraising income tenfold. By obtaining various grants, we can expand the services we bring to the Centres and fulfill our education mandate. Thank you to everyone who donated to the Society in 2018. A special thank you to those who supported the Robotic Telescope Project. A list of donors appears in this Extended Annual Report, and on our website at <https://rasc.ca/donate>.

A grant from the Trottier Family Foundation made it possible to hire a Youth Outreach Coordinator in 2018. Jenna Hinds joined the Society in October and dove right into reaching out to youth members. She formed a Youth Committee, and there are plans for youth programming in 2019. Jenna is also an expert in producing videos on observing specific events such as lunar eclipses. She is planning a series of introduction-to-astronomy videos this summer.

We are excited to be hiring a new Assistant Executive Director this spring to help with the day-to-day tasks and implementing new programs to benefit members, our Centres, and committees, and to support our public outreach programming.

I continue to be amazed by the Society staff. Our accounting manager, Renata Koziol, handles all the day-to-day finances. Her contributions to the Society span all areas, and many of the improvements we see in Society operations are due to Renata's suggestions and direct involvement. As noted above, Jenna is a wonderful new addition to our staff. She helps out in various areas in addition to the Youth Outreach Program and is always suggesting improvements where needed. Julia Neeser, our marketing and membership coordinator, left the Society in late 2018. We thank her for all her work for the Society and wish her well with her new job. Madison Chilvers was hired to replace Julia and has fit right into her role, assisting Renata and handling requests from members and customers.

I look forward to seeing many members at the Annual General Assembly at York University in June.

Clear skies in 2019!

Randy Attwood
Executive Director

SECRETARY'S MESSAGE

The Board met 14 times in 2018: 12 times via WebEx; once at the GA in Calgary; and again in Toronto face to face. An increasing amount of Board business is conducted through email exchanges and votes but the value of periodic face to face meetings was confirmed by the experience of the productivity achieved at the meeting in October.

Changes to the Policy Manual are given as follows:

- 5.5 G24 Anti-Harassment Policy
- 5.6 G24 Anti-Harassment Policy, Add Committee chair provision to Committee Terms of Reference.
- 5.7 Travel Expenses for driving
- 5.8 G26 Special Projects Program; (Approved BOD 18-9)
G24 Anti-Harassment Policy; (Approved BOD18-14)
G23 Conflict and Complaint Resolution; (Approved BOD18-14)
G13 Society Discussion Lists and Social Media; (Approved BOD18-14)
Reformatted to incorporate a proper Table of Contents
Added C15 Inclusivity and Diversity Committee; (Approved BOD18-13)

As the National Secretary, focus was placed on improving communications between Centres, The National Council and the National Office. Including looking at options for replacement or improvement if the Society's Communications and Information Technology used for this purpose. The work on this has only just begun and we can expect to see changes and improvements over the next few years.

We offer condolences to the families of the following members who passed during 2018: Mr. Keith Janke (Edmonton), Mr. Terry Hicks (Kingston), Ms. Ruth Hicks (Kingston), Mr. Peter Fenety (New Brunswick), Mr. Donald R Austin (Toronto), Mr. Scott Drabin (Toronto) and Ms. Norma Tose (Unattached).

Roger Nelson
National Secretary

RASC'S 150TH OFFICIAL COIN AND STAMPS



Prominent design elements include the Eagle Nebula and its pillars of interstellar gas and dust, which are known as the Pillars of Creation. Also featured are the Moon, the Andromeda Galaxy, and a blazing meteorite, enhanced by a genuine iron meteor fragment from the Campo del Cielo meteorite field



The stamps depict astrophotos taken by two RASC members. Matt Quinn's stunning photo of the Milky Way was taken at Bruce Peninsula National Park in Ontario. Alan Dyer captured a magnificent image of the Northern Lights in Churchill, Manitoba. Both photographs were taken in 2016.

Membership Statistics 2008-2018

Centre	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Belleville	31	26	28	33	28	31	30	31	37	26	32
Calgary	460	458	421	460	434	381	336	282	271	300	317
Charlottetown		0	0	0	7	13	20	19	25	24	24
Edmonton	325	332	302	294	274	277	229	235	260	257	258
Halifax	160	172	164	172	170	169	153	154	159	155	157
Hamilton	123	113	111	116	109	103	78	61	66	70	76
Kingston	60	64	67	65	72	75	66	66	74	90	98
Kitchener-Waterloo	142	135	114	126	130	109	115	106	115	116	118
London	116	115	119	124	129	110	126	104	118	97	101
Mississauga	180	183	170	179	188	168	132	123	120	127	120
C.F de Montréal	18	18	20	17	18	16	18	20	22	24	23
Montréal	169	143	135	126	117	109	110	91	87	103	107
New Brunswick	103	108	91	88	77	66	68	68	66	75	79
Niagara	98	95	88	78	73	62	69	69	71	82	97
Okanagan	141	133	133	122	124	115	106	92	116	103	88
Ottawa	387	372	358	361	343	319	325	328	370	389	410
Prince George	78	92	99	76	57	66	63	69	64	64	79
Québec		13	15	15	18	16	20	20	17	17	35
Regina	84	78	88	111	94	80	75	62	62	52	48
St. John's	74	60	61	58	57	58	47	44	45	48	47
Sarnia	16	11	15	14	20	12	11	15	15	19	24
Saskatoon	83	85	83	75	73	68	70	70	72	71	71
Sunshine Coast	57	72	65	69	50	43	32	38	35	32	
Thunder Bay	45	45	46	49	45	51	50	46	46	44	37
Toronto	803	824	860	904	869	782	611	573	554	502	506
Vancouver	262	254	236	254	217	198	226	228	244	251	263
Victoria	276	257	235	216	202	176	163	164	166	185	173
Windsor	104	116	106	107	96	84	90	100	96	96	98
Winnipeg	222	240	214	228	221	210	178	180	168	162	169
Yukon	34	32	44								
Unattached	402	432	413	429	431	428	446	435	434	459	530
Honorary	14	15	15	15	15	15	15	15	15	15	15
	5066	5093	4916	4981	4760	4410	4077	3908	4010	4055	4216

Membership by Type

Type	Number	% of Total
Ordinary	3837	75.7
Family	775	15.3
Life	284	5.6
Youth	156	3.1
Honorary	(14)	.3

Membership by Country

Country	Number	% of Total
Canada	4916	97.0
USA	131	2.6
Other	19	.4

TREASURER'S MESSAGE

With most discussions of a financial nature, the mind's eye turns first to the overall results and so I usually begin with the bottom-line up front. For the fiscal year ended 2018 December 31, the Society saw an excess of expenses over revenue for the year to the tune of \$137,018.

Membership-fee revenue was down very slightly compared to 2017. However, this was more than offset by the strong success in fundraising efforts led by the Society's fundraising consultant, Lisa di Veto. Donation and grant revenues increased by \$164,145 compared to 2017—a testament to Lisa di Veto's extremely valuable contribution to our purpose. The contribution by the Society's publications was also net positive (\$110,251 for 2018). Publications are expected to make a positive contribution in 2019 as well.

Most expenses were stable year over year, with a slight increase in compensation, and an increase in Marketing expense, which represents the hiring of our fundraising consultant. In 2018, the

Society did not receive a cost recovery from SkyNews, whereas in 2017 the amount recovered was \$52,000. New expenses related to the Robotic Telescope were offset by targeted donations.

I would like to note that the National Finance Committee and Board of Directors are committed to returning the Society's overall financial condition to one of long-term sustainability. We have seen a net deficit in three of the past five fiscal years, and we are unfortunately forecasting a deficit in 2019. The Finance Committee is dedicated to finding efficiencies as well as identifying key new initiatives in order to curtail recurring deficits and protect long-term viability. I'd also like to thank all the members of the Finance Committee, as well as our Accounting Manager, Renata Koziol, and our Executive Director, Randy Attwood, for their valuable assistance in helping me achieve this goal.

Catherine Carr
Treasurer

Financial Statements of

**THE ROYAL ASTRONOMICAL
SOCIETY OF CANADA**

**LA SOCIÉTÉ ROYALE D'ASTRONOMIE
DU CANADA**

December 31, 2018

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P J Brocklesby CPA CA LPA
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INDEPENDENT AUDITOR'S REPORT

To the Members of
**The Royal Astronomical Society of Canada /
La Société Royale D'Astronomie Du Canada**

Qualified Opinion

We have audited the financial statements of The Royal Astronomical Society of Canada / La Société Royale D'Astronomie Du Canada ("the Society") which comprise the balance sheet as at December 31, 2018, and the statements of revenue and expenses, changes in net assets, and cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, except for the possible effects of the matter described in the *Basis for Qualified Opinion* section of our report, the accompanying financial statements present fairly, in all material respects, the financial position of the Society as at December 31, 2018, and the results of its operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

Basis for Qualified Opinion

In common with many charitable organizations, the Society derives revenue from donations, the completeness of which is not susceptible of satisfactory audit verification. Accordingly, our verification of these revenues was limited to the amounts recorded in the records of the Society and we were not able to determine whether any adjustments might be necessary to donation revenue, excess of revenue over expenses for the year, assets or unrestricted net assets.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Society in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our qualified opinion.

Information Other than the Financial Statements and Auditor's Report thereon

Management is responsible for the other information. The other information comprises the information included in the Annual Report of the Society but does not include the financial statements and our auditor's report thereon. The Annual Report is expected to be made available to us after the date of this auditor's report.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information, and in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Canadian accounting standards for not-for-profit organizations and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Society's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Society or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Society's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Society's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast doubt on the Society's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Society to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

TORONTO, Ontario

March 23, 2019



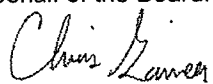
Licensed Public Accountants


THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
 Balance Sheet

As at December 31	2018	2017
Assets		
Current		
Cash	\$ 137,341	\$ 77,436
Accounts receivable	59,877	36,990
Receivable from SkyNews Inc. (note 5)	-	9,628
Inventory	22,007	17,608
Prepaid expenses	22,662	23,340
	241,887	165,002
Investments (note 4)	670,261	859,942
Investment in SkyNews Inc. (note 5)	198,737	215,238
Capital assets (note 6)		
Tangible assets	52,771	6,786
Intangible assets	27,403	41,455
	\$ 1,191,059	\$ 1,288,423
Liabilities		
Current liabilities		
Accounts payable and accrued liabilities	\$ 56,308	\$ 29,434
Deferred revenue		
Membership fees for ensuing years	136,659	123,662
Journal subscriptions	21,351	18,918
Unamortized life membership fees (note 7)	18,552	21,202
	232,870	193,216
Net Assets		
Unrestricted	462,243	542,097
Internally restricted (note 9)	495,946	553,110
	958,189	1,095,207
	\$ 1,191,059	\$ 1,288,423

Commitment (note 8)

On behalf of the Board:


 _____ President


 _____ Treasurer

See accompanying notes to financial statements.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA**LA SOCIETE ROYALE D'ASTRONOMIE DU CANADA**

Statement of Changes in Net Assets

Years ended December 31	Internally Restricted (note 9)	Unrestricted	2018	2017
Balance, beginning of year	\$ 553,110	\$ 542,097	\$ 1,095,207	\$ 1,138,525
Excess (deficiency) of revenue over expenses for the year	-	(137,018)	(137,018)	(43,318)
Transfers (note 9)	(57,164)	57,164	-	-
Balance, end of year	\$ 495,946	\$ 462,243	\$ 958,189	\$ 1,095,207

See accompanying notes to financial statements.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

Statement of Revenue and Expenses

Years ended December 31	2018	2017
Membership fee revenue	\$ 209,637	\$ 212,743
Publication revenue		
Observer's Handbook	127,099	121,033
Observer's Calendar	34,230	35,249
Journal	30,322	35,467
Shipping and handling	26,248	35,354
Other Publications	4,540	7,436
Educational aids	4,180	4,055
	226,619	238,594
Miscellaneous income		
Donations and grant	185,565	21,420
Other income	14,951	12,363
Promotional products	7,053	33,381
SkyNews Inc. (note 5)	(16,501)	2,683
	191,068	69,847
Investment income (net)		
Gain (loss) on investments	(22,532)	25,287
Interest and dividends	18,378	19,879
Investment manager fees	(8,758)	(11,658)
	(12,912)	33,508
Total revenue	614,412	554,692
Publication costs		
Journal	45,367	47,699
Freight and handling costs	34,080	38,072
Cost of publications sold	32,153	34,696
Observer's Handbook	4,768	2,614
	116,368	123,081
Operating costs		
Office salaries and employee benefits	209,440	190,694
Membership services	94,245	92,717
Advertising and marketing	67,919	13,289
Occupancy	54,801	28,680
Office expenses	53,869	34,950
Services	41,349	37,769
Amortization of capital assets	29,303	25,539
Committees	28,975	48,007
Travel expenses	28,458	41,592
Robotic telescope	24,254	-
Cost of promotional items sold	2,449	7,667
Strategic planning	-	6,150
Recovery of office salaries and rent (note 5)	-	(52,125)
	635,062	474,929
Total expenses	751,430	598,010
Excess of expenses over revenue for the year	\$ (137,018)	\$ (43,318)

See accompanying notes to financial statements.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

Statements of Cash Flows

Years ended December 31	2018	2017
Cash provided (used) by operating activities		
Excess of expenses over revenue for the year	\$ (137,018)	\$ (43,318)
Charges not requiring a current cash payment or receipt		
Amortization of capital assets	29,303	25,539
Amortization of life membership fees	(2,650)	(2,650)
Loss (income) of SkyNews Inc.	16,501	(2,683)
	(93,864)	(23,112)
Changes in non-cash working capital components		
Accounts receivable and receivable from SkyNews Inc.	(13,259)	(15,500)
Inventory	(4,399)	13,560
Prepaid expenses	678	(3,819)
Accounts payable and accrued liabilities	26,874	(621)
Deferred revenue	15,430	6,705
	(68,540)	(22,787)
Cash provided (used) by investing activities		
Investments (net)	189,681	17,704
Purchase of capital and intangible assets	(61,236)	(34,375)
	128,445	(16,671)
Increase (decrease) in cash during the year	59,905	(39,458)
Cash, beginning of year	77,436	116,894
Cash, end of year	\$ 137,341	\$ 77,436

See accompanying notes to financial statements.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

Notes to Financial Statements
December 31, 2018

1 Organization

The Royal Astronomical Society of Canada ("the Society") is a Canadian corporation without share capital and a registered charitable organization, incorporated for the purpose of stimulating interest in and promoting astronomy and related sciences. The Society is not subject to income taxes pursuant to exemptions accorded to registered charities in the income tax legislation.

2 Significant accounting policies

These financial statements have been prepared by management in accordance with Canadian accounting standards for not-for-profit organizations.

a) Cash

Cash includes cash on hand and deposits in financial institutions.

b) Investments

The Society has elected to value all investments, with the exception of the investment in SkyNews Inc., at fair value, which is based on quoted market values.

c) Investment in SkyNews Inc.

The Society purchased SkyNews Inc., a private corporation, on June 29, 2015 to further the Society's mission. SkyNews Inc. publishes a highly regarded magazine which provides an excellent source of educational information on astronomy and allied sciences to the public.

The Society owns 100% of the shares of SkyNews Inc., a profit oriented entity, and accordingly controls the corporation. The Society has elected to account for the investment using the equity method.

d) Inventory

Inventory is comprised of publications and promotional items for re-sale and is carried at the lower of cost and net realizable value. Cost is determined on an average cost basis.

e) Capital assets

Capital assets are recorded at cost. Cost comprises the purchase price and any directly attributable cost of preparing the asset for its intended use.

A capital asset is tested for impairment whenever events or changes in circumstances indicate that its carrying amount may not be recoverable. An impairment loss is recognized in the statement of revenue and expenses when the carrying amount of the asset exceeds the sum of the undiscounted cash flows resulting from its use and eventual disposition. The impairment loss is measured as the amount by which the carrying amount of the capital asset exceeds its fair value. An impairment loss is not reversed if the fair value of the capital asset subsequently increases. As at December 31, 2018, no such impairment exists.

Amortization is provided over the estimated useful lives of the assets using the straight-line basis as follows:

Tangible assets:	Telescope	7 years
	Computer hardware	3 years
	Office furniture	10 years
	Leasehold improvements	15 months
Intangible assets:	Software	5 - 10 years
	Website development	3 years, 1/2 in year of acquisition

f) Revenue recognition

i) Membership fees

Membership fees received in the first half of the year are recognized during the current year. Those received in the second half of the year are recorded as deferred revenue and recognized in the following year. The Society previously offered life memberships to members. Life memberships received in prior years were credited to unamortized life membership fees liability account, as described in note 7. The unamortized life membership fees are being recognized as revenue evenly over 10 years to 2025.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

Notes to Financial Statements
December 31, 2018

2 Significant accounting policies continued

f) Revenue recognition continued

ii) Contributions

The Society follows the deferral method of accounting for contributions. Unrestricted contributions are recognized as revenue when received or receivable, if the amount to be received can be reasonably estimated and collection is reasonably assured.

iii) Investment income

Investment income is recognized on an accrual basis. The unrealized gain or loss on investments, being the difference between cost and fair value, is recognized in investment income for the year.

iv) Subscriptions and publications

Journal subscription revenues are amortized into income over the subscription period. Publications are recognized as revenue when shipped.

g) Contributed services

The Society is dependant on the voluntary services of many individuals. The value of donated services is not recognized in these financial statements.

h) Management estimates

The preparation of financial statements in accordance with Canadian accounting standards for not-for-profit organizations requires management to make estimates that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Significant estimates include the impairment of accounts receivable and the useful lives of capital assets. All estimates are reviewed periodically and adjustments are made to the statement of operations as appropriate in the year they become known.

i) Financial instruments

i) Measurement

The Society initially measures its financial assets and financial liabilities at fair value. The Society subsequently measures all its financial assets and financial liabilities at amortized cost except for its investments which are measured at fair value. Changes in fair value are recognized in the statement of revenue over expenses for the year.

Financial assets measured at amortized cost include cash and accounts receivable. Financial liabilities measured at amortized cost include accounts payable and accrued liabilities.

ii) Impairment

At the end of each reporting period, the Society assesses whether there are any indications that a financial asset measured at amortized cost may be impaired. When there is an indication of impairment, the Society determines whether a significant adverse change has occurred during the period in the expected timing or amount of future cash flows from the financial asset and it reduces the carrying amount of the asset to the highest of the following: i) the present value of the cash flows expected to be generated by holding the asset discounted using a current market rate of interest appropriate to the asset; ii) the amount that could be realized by selling the asset at the statement of financial position date; and iii) the amount the Society expects to realize by exercising its rights to any collateral held to secure repayment of the asset net of all costs necessary to exercise those rights. The carrying amount of the asset is reduced directly or through the use of an allowance account. The amount of the reduction is recognized as a bad debt in the statement of revenue and expenses. When the extent of impairment of a previously written-down asset decreases and the decrease can be related to an event occurring after the impairment was recognized, the previously recognized impairment loss is reversed to the extent of the improvement, directly or by adjusting the allowance account. The amount of the reversal is recognized in the statement of revenue and expenses in the period the reversal occurs.

iii) Transaction costs

Transaction costs are recognized in the statements of revenue and expenses in the period incurred, except for financial instruments that will be subsequently measured at amortized cost. Investment management fees associated with the Scotia McLeod managed portfolio are expensed as incurred.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA**LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA**

Notes to Financial Statements

December 31, 2018

3 Helm Fund

The Society is trustee of an endowment fund created by Mr. Walter J. Helm (a former Royal Astronomical Society of Canada member) who passed away June 5, 1960. In his will he provided a bequest to the Society that was to be used to support the general purposes of the David Dunlap Observatory (DDO) in Richmond Hill, Ontario. Under the terms of a 2010 court interpretation, the income of the Helm Fund is presently being applied in support of on-going public education programs at the DDO site.

The fair value of the total assets of the Helm Fund under administration by the Society at December 31, 2018 are \$140,585 (2017 - \$145,407) and are excluded from the Society's financial statements as the Society is not the legal owner or beneficiary of the Fund.

4 Investments

As at December 31	2018	2017
Managed portfolio at ScotiaMcLeod		
Fixed income investments	\$ 294,330	\$ 377,308
Canadian equity investments	215,645	302,970
U.S. equity investments	122,702	147,949
Cash	37,584	31,715
	\$ 670,261	\$ 859,942

The actively managed portfolio with Scotia Wealth Management (Scotia McLeod) includes 16 fixed income investments (2017 - 17 investments) comprised of government and corporate bonds with stated interest rates ranging from 1.20% to 3.19% (2017 - 1.20% to 3.75%), maturing on dates ranging from March 1, 2019 to December 15, 2023 (2017 - August 9, 2018 to June 15, 2022).

The Canadian equity investments include share and trust units of 33 Canadian entities (2017 - 29 Canadian entities). The single largest holding is 140 shares of Royal Bank with a market value of \$13,082 (2017 - 265 shares of Toronto-Dominion Bank with a market value of \$19,517).

The U.S. equity investments include share and trust units of 33 entities (2017 - 34 entities). The single largest holding is 48 shares of Microsoft Corp. with a market value of \$4,875 US\$ (2017 - 61 shares of Microsoft Corp. with a market value of \$5,218 US\$).

The fixed income and equity investments have been recorded at market values based on pricing information provided by Scotia McLeod.

5 Investment in SkyNews Inc.

The Society purchased 100% of the common shares of SkyNews Inc. on June 26, 2015. The fiscal year end of SkyNews Inc. is March 31, accordingly, the net income for the year ended March 31, 2018 has been recognized in the financial statements of the Society in 2018. The following summary is taken from the unaudited financial statements of SkyNews Inc.

As at March 31	2018	2017
Total assets	\$ 82,039	\$ 119,546
Total liabilities	193,192	214,198
Total deficit	(111,153)	(94,652)
Year ended March 31	2018	2017
Total revenue	543,063	\$ 531,159
Total cost of sales	507,212	464,732
Total expenses	52,352	63,744
Net income (loss) for the year	(16,501)	\$ 2,683

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

Notes to Financial Statements
 December 31, 2018

5 Investment in SkyNews Inc. continued

The Society has recognized cost recoveries totaling \$Nil (2017 - \$52,125) for office salaries and rent charged to SkyNews Inc. Included in membership services expense is \$50,087 (2017 - \$49,748) for purchases of SkyNews Magazine in the year which is distributed to Society members as part of their membership subscription. The Society also expensed \$6,236 (2017 - \$6,236) in advertising and marketing for advertisements in SkyNews Magazine.

These transactions were made in the normal course of operations and have been measured at the exchange amount, which is the amount of consideration established and agreed to by the related parties.

6 Capital assets

	2018		2017	
	Cost	Accumulated Amortization	Cost	Accumulated Amortization
Tangible assets				
Telescope	\$ 51,947	\$ 5,566	-	-
Computer hardware	\$ 18,513	\$ 16,531	\$ 15,729	\$ 14,595
Office furniture	6,094	2,353	2,629	1,635
Leasehold improvements	4,989	4,323	4,989	332
Library	1	-	1	-
	\$ 81,544	\$ 28,773	\$ 23,348	\$ 16,562
Net book value		\$ 52,771		\$ 6,786
Intangible assets				
Software	\$ 104,594	\$ 78,815	\$ 103,503	\$ 64,009
Website development	13,715	12,091	11,766	9,805
	118,309	90,906	115,269	73,814
Net book value		\$ 27,403		\$ 41,455

7 Unamortized life membership fees

	2018	2017
Life membership fees as of January 1	\$ 21,202	\$ 23,852
Deduct: Amortization to income	(2,650)	(2,650)
Balance, December 31	\$ 18,552	\$ 21,202

8 Commitment

The Society leases space for offices and a museum. The leases extend to March 31, 2019. The minimum annual payments required under the leases, excluding an estimate of the proportionate share of property taxes, maintenance and insurance for the premises, for fiscal 2019 is \$6,267. Property tax, maintenance and insurance in addition to the base rent is estimated at \$32,000 for calendar 2019, provided the leases are extended to December 31, 2019.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA**LA SOCIETE ROYALE D'ASTRONOMIE DU CANADA**

Notes to Financial Statements

December 31, 2018

9 Internally restricted net assets

The Society has internally restricted certain funds. The Ruth Northcott Education Fund (formerly the Ruth Northcott Fund) was established in 1969 and funds are used for a variety of specified purposes related to public education and outreach. The RASC Legacy Fund (formerly the P.M. Millman Endowment Fund) was established in 1990 for the purpose of providing for the long-term growth of the Society. The Sustaining Membership Fund was established in 2009 to encourage Centres to organize and host public talks by speakers from outside their local area about astronomical related topics. The Sustaining Membership Fund has been closed out to the Ruth Northcott Education Fund effective December 31, 2018 per Board of Directors authorization.

An amount equal to the investment income (loss) for the year is transferred to all funds annually on a proportionate basis. All disbursements from these funds must be approved by the Board of Directors.

				2018	2017
	Sustaining Membership Fund	Ruth Northcott Education Fund	RASC Legacy Fund	Total	Total
Fund balance, January 1	\$ 4,067	\$ 228,921	\$ 320,122	\$ 553,110	\$ 536,526
Transferred from unrestricted net assets:					
Investment income (loss)	(48)	(2,699)	(3,774)	(6,521)	15,791
Donations	1,429	28,621	503	30,553	6,943
Expenses	(4,995)	(38,101)	(38,100)	(81,196)	(6,150)
Transfer	(453)	453	-	-	-
	(4,067)	(11,726)	(41,371)	(57,164)	16,584
Balance, December 31	\$ -	\$ 217,195	\$ 278,751	\$ 495,946	\$ 553,110

10 Financial instruments

The Society is exposed to various risks through its financial instruments. The following analysis provides a measure of the Society's risk exposure and concentrations.

Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. The Society is exposed to credit risk through its cash, accounts receivable and investments. Credit risk related to cash is minimal as funds are fully insured and held by credit-worthy parties. Accounts receivable are generally unsecured. At December 31, 2018 two customers account for 81% of the total accounts receivable balance. Both were collected in full in 2019. The investment policy requires diversification of investments within categories, and sets limits on exposure to individual investments.

Liquidity risk

Liquidity risk is the risk that the Society will not be able to meet a demand for cash or fund its obligations as they come due. The Society meets its liquidity requirements by ensuring adequate cash is maintained and investments are available to be converted to cash if and when required.

Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk is comprised of currency risk, interest rate risk and other price risk.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

Notes to Financial Statements
December 31, 2018

10 Financial instruments continued

Market risk (continued)

Currency risk

Currency risk reflects the risk that the Society's earnings will decline due to the fluctuations in foreign exchange rates. The Society has cash, investments and accounts receivable denominated in U.S.\$ totaling \$158,976 US\$ at December 31, 2018 (2017 - \$171,548). The exchange rate used to convert US\$ assets at December 31, 2018 is \$1 US = 1.3642 Cdn (2017 - \$1.2545 Cdn).

Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Society is subject to interest rate risk to the extent of its fixed income investments and cash on deposit with financial institutions that earn interest at market rates. The Society manages its exposure to the interest rate risk of its cash by maximizing the interest income earned on excess funds while maintaining the liquidity necessary to conduct operations on a day-to-day basis. Fluctuations in market rates of interest on cash do not have a significant impact on the Society's results of operations.

The primary objective of the Society with respect to its fixed income investments is to ensure the security of principal amounts invested, provide for a high degree of liquidity, and achieve a satisfactory investment return.

Other price risk

Other price risk refers to the risk that the fair value of financial instruments or future cash flows associated with the instruments will fluctuate because of changes in market prices (other than those arising from currency risk or interest rate risk), whether those changes are caused by factors specific to the individual instrument or its issuer or factors affecting all similar instruments in the market.

The Society is exposed to other price risk because of its equity investments.

Changes in risk

There have been no changes in the Society's risk exposures from the prior year.

HISTORY COMMITTEE ANNUAL REPORT—2018

The Society's History Committee was engaged in many activities flowing from its multiform mandate to "foster preservation and interpretation of the history of the Society, and its role in the development of astronomy," to maintain our material heritage of astronomy, and to encourage the responsible and imaginative incorporation of the stuff of Canadian astronomical history and heritage in the Society's diverse programs.

The largest accession to the RASC Archives was space itself, enough of it to more comfortably house our collections (and the CASCA Archives). The new space was officially inaugurated on 2019 May 12 in the presence of the local Member of Parliament, and numerous RASC and community guests by open invitation, some from farther afield than anticipated. The event was well-attended.

We also received a recreation of Galileo's pendulum mechanism, by Nathaniel "Nat" Cohen (1926-1996) of the Halifax Centre, the gift of Dr. Roy Bishop, FRASC. This is a superb "museum-quality" piece.

Another gift was from our Honorary President, Prof. Douglas Hube. The most significant of the four books he generously donated is Mary Agnes Clerke's *Problems in Astrophysics*, 1st ed. (London: Adam & Charles Black, 1903). This copy was owned by successive Radcliffe observers Dr. Harold Knox-Shaw, and Prof. Andrew David Thackeray. Mary Agnes Clerke was an Honorary Member of the Society.

During the period covered by this report, Committee members published 14 contributions relating to the history of astronomy, including books and papers, and delivered 25 presentations, including formal conference papers, colloquia, and podcasts.

Much of the Committee members' activity on behalf of the Society in promoting awareness of our astronomical history and heritage was channelled in 2018 through the programs of the RASC's sesqui-

centennial. Seven Committee members took part in RASC 2018—A Shared Sky: the RASC 1868–2018, the history symposium held during the General Assembly in Calgary, on June 29, and July 1. Two Committee members played key roles in Cultural Connections projects: i. *Out of This World—Art* inspired by all things astronomical at the Propeller Gallery (Toronto), from July 4 to 22; and ii., *150 Years of Astronomical Imagery* at the Homer Watson House & Gallery (Kitchener), from September 29 to October 21. Both exhibitions included imagery of artifacts from our Archives. Two Committee members were the hosts, and one the writer and researcher, for the RASC 2018 Podcasts. Finally, *Viewing the Moon Across Time*, was (and is) an observational project incorporating historical materials in an experimental way in a modern observing project.

At the request of the Society's Robotic Telescope Team, the Committee compiled a list of suggested celestial targets of significance in the history of Canadian astronomy for the Society's robotic telescope. Supporting documentation for the objects was also provided.

The Committee members were *Randy Attwood, FRASC (ED), Chris Beckett (Unattached), Dr. Roy Bishop, FRASC (Halifax), Eric Briggs (Toronto), Peter Broughton, FRASC (Toronto), Dr. Karen Finstad (Ottawa Centre), Dr. Chris Gainor (RASC National President, Victoria), *Renata Koziol (Accounting Manager), Heather Laird (Calgary), *Barry Matthews (Ottawa Centre, observer), Clark Muir (Kitchener-Waterloo, Vice Chair), Andrew Oakes (Unattached), Randall Rosenfeld (Unattached, Chair), and Dr. Mark Tovey (London) (*=non-voting members). The Committee wishes to acknowledge the excellent level of support it received from the employees of the Society in realizing its programs. For more detailed information on the projects listed here, please see the Committee reports available at www.rasc.ca/history-committee.

RASC 150 WORKING GROUP ANNUAL REPORT

The RASC 150th Working Group was involved with the development, and administration of sesquicentennial programs for the Society. Their work began in 2015.

The sesquicentennial opening event was a National Star Party on January 27, hosted by Paul Delaney, which was broadcast live across the country, with segments given over to various Centres, and messages of congratulations from allied institutions (www.rasc.ca/national-star-party-2018-january-27). Canadian astronaut David Saint-Jacques took part, delivering greetings on behalf of the Canadian Space Agency (CSA; www.rasc.ca/2018). A second National Star Party took place on September 15 (without the broadcast component). Both were well attended (but particularly the first).

In order to encourage initiatives between RASC Centres and local partner organizations, Cultural Connections, an online detailed resource kit was produced (project leads R.A. Rosenfeld and Jim Hesser; www.rasc.ca/cultural-connections-resources). The K-W Centre, and the RASC Archives took up the challenge, and were responsible for two significant art shows and associated events: Out of This World—Art inspired by all things astronomical at the Propeller Gallery (Toronto), from July 4 to 22, and 150 Years of Astronomical Imagery at the Homer Watson House & Gallery (Kitchener), from September 29 to October 21. These were considered highly successful by the organizations which partnered with the RASC.

A series of podcasts and supplementary webpages were prepared and broadcast throughout the year, each concentrating on a particular theme, episode, or people in the Society's history (project leads Heather Laird & R.A. Rosenfeld; www.rasc.ca/rasc-2018-podcasts). Research on several of the podcasts resulted in new ground being broken in recovering the history of the RASC. The producer and sound engineer was Chelsea Body.

The RASC Mosaic is a multi-image graphical representation of the Society's historic, and continuing education and public outreach efforts (project lead June Macdonald; www.rasc.ca/rasc-2018-mosaic). The mosaic was revealed at the GA, and is available from the website.

Imagining The Skies was the sesquicentennial astrophotography, sketching, and creative arts contest (project leads Lauri Roche & Jim Hesser; www.rasc.ca/imagining-and-imagining-your-skies). The RASC 150 WG was very pleased with the number of submissions, and their quality. Technical assistance was received from Doug Rennehan.

A Shared Sky: the RASC 1868-2018 was the symposium on RASC history held at the GA, featuring ten speakers on June 29 and July 1 (project lead R.A. Rosenfeld; www.rasc.ca/rasc-2018-shared-sky-rasc-1868-2018). There was much interest in the symposium, and the expanded version as a book is much anticipated.

Viewing the Moon Across Time provided an opportunity to creatively enjoy the flavour of past amateur astronomy, through active engagement with its materials (project lead R.A. Rosenfeld; www.rasc.ca/viewing-moon-across-time). It is an innovative program introducing the techniques of experimental and cognitive archaeology to modern observers, to enable them to more meaningfully understand past styles of observing, access past observing records, and incorporate past techniques into their present practice.

The RASC commissioned a logo for its sesquicentennial, designed by Janice Maclean, with Randy Attwood and R.A. Rosenfeld acting as consultants (www.rasc.ca/150th-anniversary-logo).

Celebration of our 150th year was acknowledged beyond the Society. The Governor General of Canada, Her Excellency the Right Honourable Julie Payette, extended sesquicentennial greetings to the RASC. Canada Post commissioned a commemorative set of stamps in honour of the anniversary, based on designs by Alan Dyer and Matt Quinn, which were issued at the GA on June 29 (www.canadapost.ca/blogs/personal/perspectives/canada-post-releases-astronomy-stamps/), and the Royal Canadian Mint issued a commemorative 1 oz. pure silver \$20 coin based on our sesquicentennial logo (www.youtube.com/watch?v=6hF_Q5e2Sk). The active involvement of the Executive Director Randy Attwood was crucial to the success of these two issues.

The members of the RASC 150th Working Group were Paul Delaney, Jim Hesser, Heather Laird, June Macdonald, Lauri Roche, and R.A. Rosenfeld (chair).

ANNUAL MEETING MINUTES—2018

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

Minutes of the Annual General Meeting 2018

Red and White Club, McMahon Stadium, University of Calgary on Saturday, 2018 June 30 at 10:00 MDT and Sunday, 2018 July 1 at 09:00 MDT

1. Call to Order

Saturday, 2018 June 30, 10:00 MDT

2. Adjournment of Annual General Meeting to Sunday, 2018 July 1, 09:05 MDT.

Motion AGM 18-8-1

Don Town moved that the AGM be adjourned and restarted on Sunday, July 1 at 09:00 MDT, seconded by Craig Levine. CARRIED.

3. Call to Order

Sunday, 2018 July 1, 09:00 MDT.

4. Approval of the minutes of the 2017 AGM

MOTION 18-8-2

Moved by Don Town that the minutes of the 2017 AGM be approved, seconded by Pat Kelly. CARRIED.

5. President's Report

Colin Haig introduced the outgoing Board and our new national fundraising consultant and presented his report to the Board (previously circulated by email). Colin spoke of the charitable activities of the Society, the changing demographics of the Society, and concerns about creating a welcoming Society for all ethnicities, genders, and cultures. Colin spoke of being the "bookend president" ending our first 150 years and handing over to the next president to lead us into the next.

6. Other Reports:

1st VP: Chris Gainor presented his report to the Board, which was previously circulated by email.

2nd VP Robyn Foret presented his report to the Board, which was previously circulated by email and named the incoming Board members and officers.

Secretary: Charles Ennis presented his report to the Board, which was previously circulated by email, and reminded members of the advantages of the Public Speaker's Program.

Colin invited the new Treasurer Catherine Carr to introduce herself.

7: Moment of Silence for Deceased Members.

8. Treasurer

Randy Attwood presented the Society's financial statements and gave the Treasurer's report, which forms part of the Annual Report. Randy spoke of rising administrative costs.

MOTION 18-8-3:

Craig Levine moved that the financial statements be accepted as presented, seconded Stan Runge.

Members of the Society asked the Board questions about the financial statements and investments. Colin Haig called the question. CARRIED.

9. Executive Director's Report:

Randy Attwood presented an Executive Director's report. Randy spoke of the success of the 2017 total solar eclipse, the US Edition of the *Observer's Handbook*, the National Star Party, the Society's additional office space to display RASC and CASCA archives, summer students funded with a national grant, the RASC stamps and coin, the Robotic Telescope, the RAS visit, and encouraged members to meet the RASC office staff. Another National Star Party is planned for September. Randy spoke of Past President Dr. Halliday, who recently passed away.

10. Committee Reports

Astroimaging

Randy Attwood spoke about activities of this new committee and their gallery on line.

Awards

Craig Levine encouraged Centres to nominate people for awards.

Constitution

Chris Gainor spoke of upcoming review of policies. Centres in BC recently updated their constitutions due to the new Societies Act. Chris said he expected that similar Ontario legislation may be proclaimed soon.

Education

Lauri Roche mentioned the loss of several long-standing committee members and briefed members on the online brochure for the upcoming Mars opposition as well as other handouts produced by the EPO. Lauri announced that the committee would be reissuing the IYA cards from 2009. Robyn Foret spoke of Canada-Wide Science Fair activities.

Finance

Catherine Carr invited members to serve on the Finance Committee.

Fundraising

Heather Laird spoke of the fundraising consultant's successful grant applications resulting in summer student employees for the RASC head office, the Trottier Foundation application, and invited people to join the committee.

History

Randall Rosenfeld spoke of our history as a resource and encouraged Centres to use the archives and participate. Randall introduced new History Committee Vice Chair Clark Muir.

Information and Technology

Craig Levine thanked his committee for their hard work, and introduced new chair Roger Nelson.

Light-Pollution Abatement

LPA Chair Robert Dick submitted a report to members by email. Roland Duchesne reported a banner year for Dark-Sky Preserves (4) and of a resurgence of interest in nocturnal ecology and astrotourism. Roland reported that the committee was working on more dark-sky applications and nocturnal preserves.

Membership and Development:

Roland Duchesne thanked the people who make things happen on the Society's social networking channels.

Nominating

Robyn Foret spoke briefly on the strategic plan, financial sustainability, and changes to National Council structure.

Observing

Murray Paulson reported members earning 14 observing certificates. Murray said many Centres now have local certification and spoke of observing video projects in progress being 60% complete. A French language update is under way and two new observing programs are upcoming.

Publications

Chris Gainor recognized the work of the volunteers on the committee, the success of the US Edition of the *Observer's Handbook*, the sale of children's books in e-store, the Plaskett biography *Northern Star*, the appointment of Charles Ennis as a publications manager, the upcoming *Solar Observer's Handbook*, and the ongoing work on Davy Levy's *A Nightwatchman's Journey* autobiography.

Public Speaking

Charles Ennis spoke of this earlier in his Secretary's report.

Special Projects

Katrina Ince-Lum spoke about under utilization of this program. Peter Broughton acknowledged the support of the Special Projects Program for his book *Northern Star*.

150th Anniversary Working Group

Randall Rosenfeld asked members of this committee to come forward to be recognized. June MacDonald spoke of the 150th

Anniversary Banner Project and encouraged people to get the PDF of this banner. Heather Laird reported on the history podcasts. Lauri Roche spoke of the Imagining the Skies project and encouraged participation and voting for entries at imaginingtheskies.ca. Colin Haig recognized the service of committee volunteers and encouraged people to volunteer to serve on committees. Randy Attwood gave past president Craig Levine a plaque to recognize his service to the Society.

11: Appointment of Auditor.

MOTION 18-8-4: Steve Bedingfield moved that Tinkham and Associates be appointed as the auditor for the Society, seconded by David Brown. CARRIED.

12. Other Business

n/a

13. Adjournment

Dennis Lyons moved for adjournment. Meeting adjourned at 10:33 MDT. Next AGM meeting 2019 June 16 in Toronto.

Charles Ennis

Secretary

PUBLIC SPEAKER PROGRAM—2018

Event date	Centre	Speaker / title
· Jan 27	Vancouver	Dr. Nancy Chabot/Messenger Mission
· Mar 15	Calgary	Bonnie Buratti/The Rosetta Mission
· Apr 13	Sunshine Coast	Stanley Yen/Supernova Neutrinos
· Jul 12	Mississauga	Andrew Chaikin/Apollo 8
· Aug 06	Sunshine Coast	Sarah Pearce/Life in the Solar System
· Aug 24	Yukon	Charles Ennis/Making Starry Nights
· Sep 02	Sunshine Coast	Dr. Sean Dougherty/Canada's Telescopes
· Sep 02	Sunshine Coast	Dr. Jeremy Heyl/Precision Astronomy
· Sep 03	Sunshine Coast	Leigh Cummings/Mars Exploration
· Sep 03	Winnipeg	Paul Gray/Dark Nebulae
· Sep 14	Sunshine Coast	Richard Shaw/CHIME
· Sep 21	Yukon	Chris Gainor/Hubble Space Telescope
· Oct 12	Ontario X 4	James Edgar/Synthesis of Elements in Stars
· Oct 20	New Brunswick	Dave Chapman/In Search of the 13th Mi'qmaq Moon
· Nov 05	Sunshine Coast	Bill Wall/Large Millimetre Telescope Alfonso Serano
· Nov 08	New Brunswick	Doug Cunningham/The Poetic Experience of Astronomy
· Dec 10	Sunshine Coast	Chris Gainor/Hubble Space Telescope
· Dec 10	Sunshine Coast	Sarah Savic Kallesoe/Neils Bohr Institute

\$3424.11 was reimbursed to speakers (6 speakers waived payment)

ANNUAL REPORTS FROM THE CENTRES

BELLEVILLE CENTRE

January Belleville Centre begins its 28th year.
Don Town—“Reflector Telescope Designs, Part 1”
Greg Lisk—“Lenses” and a film about ‘Oumuamua, the cigar-shaped extra-solar asteroid discovered by Pan-STARRS.
Dave Cotterell—“Geminids Time Lapse.”

February Robert Bates—“My Latest Astrophotos.”
Greg Lisk—DPS (deep space positioning satellite)
Video tour of ISS

March Don Town—“National Council Conference Call”—\$3.00 fee increases; Calgary General Assembly to take place on Canada Day weekend (3/4 cost to be covered by National Office
Video—“Mars Curiosity Rover” tour; and “Top 10 2017 Discoveries.”
Earth Hour—March 24, 8:30–9:30 p.m.
Earth Day—April 22
Steve Burr—“My Moon and Sunspot Photos.”
Greg Lisk—videos—“SpaceX’s Falcon Heavy Test Flight” and “Is Earth’s Magnetic Field Reversing?”

April Steve Burr—astrophotos of Moon
Quinte Regional Science Fair
Observing Night
Don Town—“Telescope Designs, Part 2.”
Dave Cotterell - “Building My Newtonian.”
Video—“Curiosity on Mars.”
5 members to attend NEAF in Suffern, N.Y. this month.

May Club will do public solar and night-time observing at Presqu’ile Provincial Park again this summer.
Annual Star-B-Q will be held July 14.
Greg Lisk—“Our Trip to NEAF” photos
Dave Cotterell—“NEAF Trip” photos

June Elections for club positions
Observing session at Casa Dea Winery
Greg Lisk—“Telescopes on a Budget.”
Dave Cotterell—“My Observatory in Progress.”
Observing Night—June 15

July Don Town—National Council Meeting Report from Calgary GA held on July 1 long weekend.
New Canada Post 150th anniversary stamp and also a silver coin with tiny meteorite.
Club’s annual Star-B-Q held at Presqu’ile Provincial Park on July 14.
Observing reports—occultation of Saturn on Wednesday, July 4/5.
Presqu’ile Public Night-time Observing—begins July 3 and continues during August.
Presqu’ile Public Solar Observing—begins July and continues during August.
Dave Cotterell—“Summer Globulars.”
Can see Omega Centauri from 23rd-storey apartment in Toronto.
Omega Centauri’s oval shape may show rotation so may possibly be a galaxy.

August Starfest—August 9–12—11 members attended.
Steve Burr—“My Astrophotos”
Robert Bates—“Recent Astrophotos”
Public observing (solar and night-time) continues at Presqu’ile Provincial Park.

September No meeting this month.
18th Annual Fall n’Stars Star Party (RASC Belleville/Kingston Centres) held Sept. 7–10

October Speaker—Randy Boddam—“Astronomy on the Internet”—resources; observing tools; buy & sell sites; space agencies.
Speaker—Greg Lisk—“Astronomy Terms”—meteor terminology; fall vs. find, etc.
View Greg’s meteorite collection.

November David Cotterell—“My Trip to Okie-Tex Star Party.”
Don Town—“Taurids Meteor Shower.”
Dave Cotterell—“What’s Up”—Mercury; Saturn and crescent moon;
Taurids meteor shower; Moon near Pluto and asteroid Vesta; variable star Algol;
Leonids meteor shower; Full Beaver Moon.
Also “Constellation Taurus”—Hyades, Aldebaran, Pleiades; star Elnath; M1 Crab Nebula.

December Dave Cotterell—“Look Up”—star Omicron Ceti “Mira”; Neptune near Mars;
Geminids meteor shower; Comet 46P/Wirtanen closest to Earth December 16
Constellation of the Month—“Perseus.”—eta Persei, theta Persei; M76; NGC 869; NGC 1245; STSd Digital Sky Survey.
Greg Lisk—“News Stories”—spacecraft “InSight” lander touches down on surface of Mars.
Annual Christmas dinner—December 15. Fifteen present.

Joanne Burns
Secretary

CALGARY CENTRE

Calgary continues to be a RASC powerhouse in public outreach. During 2018, our small pool of dedicated volunteers contributed literally thousands of kilometres travel to various event locales around Calgary, Southern Alberta and the Rockies. Our amazing volunteers supported up to 8 public events in a given month, averaging 3 outreach events per month, and 31 for the year.

Some 10,000 interested public attended a wide variety of observing events, hosted by 200 Calgary Centre volunteers, which in reality is a pool of the same, enthusiastic group showing up with talks and telescopes, and working tirelessly to support the RASC and Calgary Centre Mission Statements.

Our social media presence is expanding across all platforms as shown here and we continue to look for opportunities to promote the RASC and Calgary Centre via these streams.

PLATFORM	Jan 2018	Jan 2019
Facebook Group	404	449
Facebook Page	4375	5088
Facebook Astronomy Calgary	2098	2314
Facebook Red Deer	1118	1093
Astronomy Meetup	2204	2455
YouTube	7347	9498
Twitter	4055	4474

Oh yeah; in between our outreach events, we hosted the GA as well. It was a well-attended event with good venues, good food, good cheer; and hundreds of volunteer hours and family support. What a great group of passionate amateur astronomers we have!

It's no surprise that volunteer burnout is a semi-permanent item on our monthly council agenda, but also no surprise that year over year, our outstanding volunteers support an endless welcome stream of curious public browsing by our eyepieces. The only possible perceived failure in our ongoing outreach program is that Calgary's membership has remained stable (stagnant?) year over year, with 2018 ending much as it began at around 450 members.

January through May, and September through November our General Meetings offer our membership various interesting and accomplished speakers as well as member presentations and workshops. Scientists, doctors, researchers, photographers, and many other talented people presented engaging and informative talks on wide-ranging subjects, all centred around astronomy and celestial pursuits.

Aside from public outreach, about 200 volunteer hours went to casino events, and we're excited to continue as they provide funding to support existing programs and our updated promotional and tradeshow presence. As our Treasurer's Report shows, we're in pretty good shape to take on the great new projects in store for us!

Our Youth Group undertook a challenging research project in 2018 and in mid-spring this dynamic group launched from a precisely chosen site northeast of Calgary. Aiming to reach 100,000 feet, and successfully recover the payload, they researched and plotted winds to predict an ideal landing site. After much effort and planning, the site was chosen, the winds favourable, and the high-altitude balloon was launched!

This was a highly engaging and enjoyable presentation by the youth team and their mentors at our November general meeting. And, the recovered video proved they exceeded expectations, reaching 102,000 feet!

We're also very proud to report that Khalil and Hassan Kurwa, two of our amazing youth members, have each been published in a recent edition of the RASC *Journal*, so check that out. You also may recall their poster presentations at the GA.

The Calgary Centre hosts two regular member events geared to seasoned and new observer's alike, at our Wilson Coulee Observatory (WCO) just south of Calgary. Some of you may have visited our comfortable clubhouse and dome. Our New Observers to Visual Astronomy (NOVA) program welcomes new observers and hosts an average of 16 people attending. Jack Milliken is the knowledgeable and entertaining host; always ready with an encouraging suggestion or interesting anecdote to help shy newcomers feel welcome and included. The Observer's Group (OG) program, also held regularly at the WCO; is equally well attended and gets consistently great reviews, whether the night is spent in deep-sky pursuits or cloudy, laughter-filled chats. Each March, we attempt our Messier Marathon at the OG.

In January, we hold a members' banquet, trading in our outdoor layers for finery and feasting as we "ooh" and "ahh" over the latest astrophoto contest entries and hand out well-deserved awards and

graciously donated prizes (a giant thanks to All-Star Telescopes for their consistent and generous support).

A fun, new banquet twist is our "Best Celestial Theme" fashion award. It used to be just the ties, but we've grown to showcase some truly incredible astro-dresses, cuff-links, jewellery, and other creative adornments. It's amazing to see the unique and beautiful celestial fashions out there.

Every June we invite our members and their families back to the WCO for a bar-b-que. At this kid-friendly inclusive event, we present Youth Group awards and thank the parents and our dedicated volunteer mentors who support this important and welcome branch of our club. Stay tuned for another exciting science project in the near future!

Calgary's Telescope For Rent (T4R) program is our most consistently popular member's program. Our exceedingly dedicated and generous volunteer has surrendered considerable square footage in his home and is kept very busy, with 75% of our glass consistently on loan. A big thanks to this outstanding contributor to our member retention program. And it's paying off. At a recent public event in a village west of Calgary, half of the telescopes out were rentals.

Volunteer efforts again come into play when we host two annual star parties.

In July we trek north to the Eccles Ranch Observatory (ERO) for the Star-B-Q. This is a weekend event where we evaluate environmental conditions on our Conservation Easement, judge the chili, and hopefully drag out our scopes for the few minutes of summer dark. This year was a very low-key event as many were recovering from hosting the GA.

In September we host the Alberta Star Party at the Starland Recreation Area near Morrin, Alberta. This event grows more popular every year, and 2018 saw about 140 of us celebrate good skies and only intermittently punishing winds.

We continue the fight to raise awareness of the need for Responsible Lighting, and we are constantly on the look-out for the next great opportunity to spread the celestial word to all.

Further to that, we have some truly great developments in the works for the Calgary Centre's future as a high profile not-for-profit public-service provider. We have passionate new blood joining the old guard on council and exciting projects on the near horizon.

Stay tuned!

Susan Yeo
Secretary



Public Outreach

The 13th annual Beaver Hills Dark Sky Preserve celebration, a.k.a. Milky Way Day, occurred September 2nd at Elk Island National Park. Working with our partners, Parks Canada, Alberta Parks, Strathcona Wilderness Centre, Ukrainian Village, and the Beaver Hills Biosphere, Edmonton members set up an information booth and several telescopes. Our information booth was busy the entire day handing out Star Finders, Moon Cards, Astrocards, and answering questions. Daytime solar viewing went well, however nighttime viewing was cancelled due to clouds and a downpour. Our evening speaker, Dr. Jayanne English from the University of Manitoba, did a great job in



front of an overflow crowd. Her skillful use of the many children in the audience to demonstrate the electromagnetic spectrum was a highlight of the talk. Parks Canada counted 150 people in the 94-seat theater. The Parks people and other partners were very happy with the day, except of course the evening weather, and were very appreciative of our efforts.

RASC Observatory

As part of its public service mandate, Edmonton Centre provided volunteers to man the Observatory situated at the TELUS World of Science. The observatory consists of a roll-off-roof observatory, housing six telescopes provided by the Edmonton Centre to bring the night sky to the public. One of the telescopes is a 5-inch Lunt with double etalon, dedicated to solar viewing. Two other scopes are equipped with white-light filters for optional solar viewing.

In 2018, 347.5 hours of RASC volunteer time were donated to the running of the observatory. About 7,500 people visited and enjoyed the views through our telescopes. These numbers were reduced from previous years due to smoke from forest fires obscuring the sky during the summer. In addition, one of our members performs one-on-one instruction for the public on how to use their telescopes. This is done on an appointment basis.

Black Nugget Lake Observatory

Aimed at furthering our mission for astronomy outreach and education, Edmonton is building a 32-inch telescope with accompanying observatory dome and control/warm-up room at a dark-sky location near Edmonton—the Black Nugget Lake Observatory (BNLO). In 2018, the BNLO Committee was successful in obtaining a Development Permit, a Building Permit, and Government of Alberta land use approval. In addition, the committee was successful in obtaining a \$40,859 grant from the Government of Alberta Community Facility Enhancement Program. When combined with funding from Edmonton Centre, RASC National, Beaver County, as well as donations from numerous builders and

suppliers (with paid involvement in the project), work began in earnest. Ground was broken in August 2018 to install screw-piles and concrete foundations for the observatory building. Next, the walls were built and erected. The 14-foot dome was lifted into place in October. Finally, significant progress was made on construction of internal framing and flooring. Levelling of the observatory site was also completed, and a 24x12-foot Visitor Centre portable building was purchased and situated on site in October. Progress on the telescope construction by BNLO Committee member Roman Unyk proceeded throughout the year. The above-noted progress involved approximately 2000 hours of volunteer time in 2018 by the BNLO Committee, plus several hundred hours by additional Centre members and other volunteers.

Northern Prairie Star Party

Attendees at the 15th-annual Northern Prairie Star Party (NPSP) were well rewarded with three interesting talks, lots of networking opportunities, and three nights of viewing. Held from September 4 to 9 at Black Nugget Lake Campground southeast of Tofield, we had 64 registered attendees, with 17 being first timers and 5 youth under the age of 21. We conducted a daytime tour of the Black Nugget Lake Observatory construction site to eight VIP visitors (i.e. four elected officials plus four project supporters). In addition, more than 20 local residents and campers (including several under the age of 21) attended the event during the day and night. Our Saturday afternoon program was well received: talks by RASC member Roman Unyk (constructing the new 32-inch telescope for the BNLO), Dr. Rodrigo Fernandez of the University of Alberta (detection of neutron-star collisions and the formation of heavy elements in our Universe), and RASC member and astronomy lecturer, Bruce McCurdy (adventures chasing meteors and meteor showers over the decades). Also noteworthy for 2018: seven attendees completed NPSP Observing Lists of varying complexities. More than 20 Edmonton volunteers helped with this year's event.

Next year's NPSP will include first light for the extraordinary 32-inch BNLO telescope housed in a domed observatory. It will provide a unique opportunity for amateur astronomers and for public education and viewing at what will be Western Canada's largest-aperture, publicly accessible telescope.

Jasper Dark Sky Festival

Edmonton Centre's partnership with Tourism Jasper and the annual Jasper Dark-Sky Festival marked its 8th year in 2018. Since Jasper was designated as an RASC Dark-Sky Preserve in March 2011, Edmonton Centre has been actively leading the festival's major dark-sky event, Beyond the Stars at Lake Annette. At the 2018 festival, our contribution consisted of two evenings of observing



The Halifax Centre of the RASC had a busy and successful year with regular meetings and a variety of outreach events promoting astronomy to the public. The Outreach Committee and many Centre volunteers carried out activities and worked in partnership with Saint Mary's University (SMU), Dalhousie University, the Minas Astronomy Group, and the Halifax Planetarium to host and support many programs and activities.

Centre Meetings

There were eight monthly meetings held the third Friday of each month in facilities provided by SMU, except for July and August; November was cancelled due to storms. The Executive met prior to the main meeting. The Centre's library cart was not available in 2018 due to lack of a Librarian and other challenges, but this was rectified in January 2019. Refreshments and discussion follow the formal meeting.

The Halifax Centre continued hosting a series of speakers at each monthly meeting with attendance varying from 30 into the 50s. Interesting to note is an increase in the number of female members and guests attending meetings. Presentations included: the premiere of their video *The Magnificent Sky: A weekend in Keji Dark Sky Preserve*; an Astrophotographer's Skies, *Summertime Imaging of skies over the Mira River*; a showing of the movie *The Spacewalker*, complete with popcorn and beverages; Dr. Rob Thacker presented his experiences in outreach and its personal rewards; four members presented *The Atacama Desert, Our Southern Sky Experiences*; a member's *Hunt for Sirius B*; time-lapse videos of *The Magic of Keji at Night: Backcountry Site 15*; two recent projects at *Abbey Ridge Observatory (ARO)*—planet-hunter project, and exoplanet *HAFP-53b*; *Deep Sea Hydrothermal Vents and the Origin of Life*; an introduction on *How a telescope Magnifies* followed by the *December Draconid observations in Roar of the Dragon!* At the AGM, our outgoing President addressed *Giacobini-Zinner's meteoroids left behind and the ZHR outbursts seen visually historically and this year.*

Thirty-six members attended our annual Members' BBQ held June 16, at St. Croix Observatory, followed by an excellent night of observing. The Annual General Meeting (AGM) was held December 7.

Halifax Centre Bylaw #1 and Policy Development

The Board of Directors put forward a minor addition to Bylaw #1 (2017) that would allow for electronic voting. A special resolution to approve the inclusion was passed at the AGM then forwarded to the Nova Scotia Registry of Joint Stock Companies for approval.

Position descriptions have been approved for all elected and appointed Halifax Centre roles and were posted in January 2019. The Policy Manual for Halifax Centre and the Board of Director Reference Manual was developed by Judy Black, the latter with the assistance of Pat Kelly and Jim Millar. The Centre's revised communications strategy was added.

St. Croix Observatory (SCO)

The Centre's dark sky observing site is approximately 40 minutes from Halifax. SCO has a roll-off roof, warm room & WR facilities. The Centre has a very popular 16-inch Go-To Sky-Watcher Dobsonian. There are regular observing nights each month with "weather permitting" gatherings arranged ad hoc on the Centre's web list.

Halifax Centre Newsletter—NOVA NOTES

Charles White took the reins as editor and produced 5 editions in 2018, with a range of 6 to 17 pages per issues that were posted on



Night Sky over the BNLO Observatory

on the shores of Lake Annette. Festival goers were treated to the constellations and the celestial jewels within them by our astronomers under pristine dark skies, despite a glaring Moon. We had the added luxury of observing Saturn early on in the evening, a big, bright Mars, and a very illuminating waxing gibbous Moon. We also had the opportunity to setup and operate a telescope at the Dark-Sky Festival VIP event at the Jasper Park Lodge, wowing approximately 60 special guests with close-up views of the Moon. Tourism Jasper counted approximately 600 festival goers at Lake Annette during the first evening, and approximately 900 during the second evening.

Mike Szelewicki
Secretary



Edmonton's Geoff Robertson solar viewing with a youngster at Elk Island National Park

the Halifax Centre website with notifications emailed to our list. An average of 15 copies were printed and mailed to members. *Nova Notes* contains articles, photos, astrophotos, Paul Heath's poetry, and Members' Meeting write-ups provided by Centre members. Publication will carry on through 2019.

There were four regular contributors to *Nova Notes*: Charles White, Dave Chapman, Paul Heath, and Tony Schellinck, with special articles written by Tony McGrath, Judy Black, Melody Hamilton, Blair MacDonald, Chris Young, John McPhee, and Michael Boschat.

Several other Members had front-page photographs: Dr. Roy Bishop, Michael Boschat, David Hoskin, Bruce Hamilton, and David Chapman, with 44 other photos and illustrations inside *Nova Notes*.

Public Outreach

The Halifax Centre can be proud of its outreach again this year. We participated in the following: library presentations, school and park presentations, youth-group talks, outreach events (Keji Dark-Sky events, Nova East, National Star Party, HalCON, APS sidewalk), Introductory Astronomy classes, both classical (SCANS) and student (THRIVE), were held, and the Centre supported local astronomy venues with BGO and planetarium talks. Members also did astronomy presentations in support of other groups events. We celebrated over 5,000 Galileo moments in 2018!

The "Main Event" this year was the National Star Party. Observations at Bishop's Landing were a great success in part due to a cruise ship and members of the international canoe/kayak competitions attending. Over 200 participated in views of Venus, Jupiter, Saturn, Mars, and the Moon. Melody and Bruce Hamilton led an event at Fort Anne, where a small group came for the short, clouded-out event.

Nova East Star Party, Smileys Provincial Park

This year's Nova East, Atlantic Canada's regional star party, was once again a success. Keynote speaker, Doug Cunningham, presented The Poetic Experience of Astronomy. Other speakers included Tony Schellinck, Kathy Walker, Paula Cunningham, Melody Hamilton & Dave Chapman, Dr. Roy Bishop, and Paul Gray. Our in-field presenters were Paul Heath and Tony Schellinck. Nova East is open to the public and shares telescopes and provides public talks for all ages. Kathy Walker won the astrophotography contest and the People's Choice Award for her photo taken of M13. New to the event this year was the astronomers' lounge, telescope medics, and the People's Choice Award.

Dark Sky Preserve Support

The Centre has also supported Kejimikujik National Park and Historic Site, which has been a Dark-Sky Preserve since 2010. Dave Chapman again helped facilitate the Dark-Sky Weekend (August 17-19), with presentations, talks, observing sessions including solar observing near the ice cream booth and by Centre members and Keji Parks Canada staff. For the second year, a special evening walk to Peter's Point Beachfront Park was held with Boxing Rock Brewery as a sponsor. Parks Canada continued to work hard to sustain and enhance Kejimikujik National Park in maintaining its Dark-Skies Preserve certification.

Members Achievements & Recognition

RASC Explore the Universe observing certificates were awarded to Judy Black, Ronnie Reid, Heidi Verheul, and Charles White. Blair MacDonald completed the Sirius B Challenge (February 2018).

Barry Burgess, Dave Chapman, and Jerry Black all earned Photos of the Week in *SkyNews*; Barry Burgess won 1st place in the annual roundup in Tripod mounted or Sky-Tracker category.

Goals for 2019

For the coming year the Halifax Centre has committed to carry on many of the public-outreach programs provided in 2018. The Centre's website is being revised in 2019 and the Centre will continue the sidewalk observing sessions, library talks, provide presenters for the Halifax planetarium, support Kejimikujik National Park, and maintain the Centre and Astronomy Nova Scotia websites. Nova East Star Party date is 2019 August 30-September 2. The Centre will also revise the Reference Manual.

Judy Black

Secretary



The Hamilton Centre has been very active this year, especially over the past few months. Regular observing nights were reinstated as part of the Centre's monthly schedule. Run by board member Roger Hill, the nights allow community and club members to work on their RASC Observing Certificates. Outreach activities took on a variety of faces, including talks, sidewalk astronomy, and visits to different locations by club members. Some members presented talks at local community centres as well as an assortment of institutions in the area. Connecting with curious minds of all ages, our outreach team has done an excellent job over the past year.

As wonderful as 2018 was, 2019 promises even more opportunities for outreach and community involvement through the club. The Centre has now registered three separate events for the IAU's 100 Hours of Astronomy in January. Observing nights are scheduled to continue monthly, with additional nights scheduled sporadically. Armchair Astronomy sessions are being reinstated starting January 13 and are expected to take place monthly. The Canadian Astrophotography School (CAPS) program is scheduled to take place this May, with a new format and instructor. This will be a major fundraiser for our Centre. Talks are already being scheduled for the spring and whispers about Sidewalk Astronomy echo toward the summer months.

Abigail Hughes

Outreach Director



Our semi-annual observatory clean-up (fall 2018).

Our year started out in Stirling Hall at Queen's University but we moved in September back to D214 Macintosh Corey Hall.

Kingston Centre meetings are held the second Thursday of each month.

Our January meeting was with our guest speaker Dr. Jennifer West, who is now working at the Dunlap Institute. Jennifer presented to us all things happening in the Radio Astronomy world. All the major telescopes, Arecibo, Parkes, FAST, CHIME, POSSUM, SKA the list goes on and the introduction of the VLA and the new Telescopes going into Australia (ASKAP). The main issue is the data collection and storage of the terabytes of data. For more information go to www.dunlop.utoronto.ca.

February was ushered in with President Rick Wagner welcoming everyone and a list of upcoming events in the night sky. We had past Observatory Coordinator, Dr. Nathalie Oulette (Astrophysicist), who is working with the CPARC (Arthur B. McDonald Canadian Particle Astrophysics Research Centre) at Queen's University. She gave a talk on all the divisions that are under this umbrella. This particular group received a large \$63.7 million federal government grant investment. Currently Nathalie is working at the Canadian Space Agency as Science Communicator. After the break, many members presented images that they had taken over the last few months.

In March we had many members show images and discuss imaging practices using PixInsight and other astrophotography programs. Stephen Craig donated a picture for a fundraiser, Jeanette Wagner won the framed picture. We learned that member Ruth Hicks (Life Member) and Terry Hicks are at Rosewood Retirement Home, and both are recuperating well.

The university was using Ellis Hall for exams in April, so interested members still met for dinner, and with the idea of going to Lake Ontario Park for an observing session. However, this was cancelled due to the weather.

This month also held the Frontenac, Lennox & Addington Science Fair on March 30 and 31. Member Dr. Bruce Elliot, who was helping out and was also a judge, reported that this year there was no award winner for the Leo Enright Prize (\$100.00) and a copy of the *Beginners Observing Guide*.

We had many interesting talks in May from members ranging from Observatories, Lunar, and Solar H α imaging. More talks on astronomy software, this month was CalSky. On a sad note, we received word that John Crossen of Buckhorn Observatory in Peterborough had passed away. A sympathy card was sent to Debbie (his wife) on behalf of the Centre. Science Rendezvous was held in conjunction with Queen's University and RMC at the KROCK Centre. A card was also sent to member Leslie Roberts wishing him a speedy recovery. There were Observing reports from members around the room on lots of interesting objects, and information on what to observe in the coming month.

June's meeting had a guest speaker, Nik Arora, speaking to us on Colours of the Universe—a discussion on wavelengths of the spectrum. More presentations from Stephen Craig on all the wonderful imaging he has done over the last while. We had more door prizes and 50/50 draws. Observing reports were given. This was our last meeting before the summer break (July, August), but some members met for dinner at the Queen's Sports Tavern and went to a movie in August.

September's meeting was right before Fall'n'Stars 2018. Rick Wagner welcomed everyone back and presented what was going

to happen in the skies during September. We also held Fall'n'Stars in Thomasburg, Ontario, with the RASC Belleville Centre. We had 32 people in attendance on Sept 7 to 9, early this year due to the Moon phase, which was waning crescent at 26.97 days. New Moon was on September 9. We had sucker holes, and Sunday we woke up to +3 °C temps and heavy frost. Nature's way of saying Fall is Coming. There were great talks on Saturday afternoon and a pizza, salad desert dinner which had zero leftovers. Thanks for all the door prize donations and awards. Everyone had a great time.

October's notes were taken by Susan Gagnon. Thank you, Susan. Here is her detailed report:

The meeting officially started at 7 p.m. I say officially because the bulk of attendees were at dinner beforehand! President Rick Wagner gave an introduction of the Centre exec and the fact that VP, Secretary, and Librarian are up for elections in November. Following this there was a rundown on QUARG Lectures (Queen's) coming up, North Frontenac and Land A dark sites are no longer posting weekend events possibly signalling the end of the season. Rick also went over the highlights of fall observing. Peter Hutchison presented the results of an *Observer's Handbook* survey he did in search of stars that are 150 light-years away. The significance of this is that the light we are seeing would have left the star when the RASC was just starting up. An interesting thought exercise on the 150th Anniversary. It was a cool idea and, as in so many of these cases, Peter remarked on just how overwhelming it is to imagine the vastness of the Universe. Malcolm Park had some deep-sky astronomy shots as well as the equipment used to take them. The equipment shown was a package designed for shipping to Chile for remote photography. For fans of the more animated sky, Malcolm had a lovely time-lapse series on a recent thunderstorm over Lake Ontario. During the break there was much chatting and inquiries on how to join, always a welcome question! Some calendars were sold. After the break, Rick showed us a photo of tornado damage in Dunrobin, a video of the Sapho occultation last month (very cool), and a deep-sky photo. Stephen Craig has also been busy with the camera and had several beautiful deep-sky photos, as well as a good picture of his scope and camera bits. There were 15.5 members and 6.5 friends of the Centre in attendance. I say 15.5 because someone went online during the meeting and joined. The meeting was adjourned at 9 p.m.

November is the Kingston Centre's Annual Meeting. We also have many positions up for Election. Vice President, Secretary, Newsletter Editor, Librarian, National Council Representative. After our Elections and Annual Meeting, we will be having member Joe Gilker give us a talk on wide-field astrophotography and nighttime landscapes. Joe helps to coordinate observing sessions at the Lennox and Addington Dark-Sky Viewing Area.

December's Christmas Banquet was at the Mandarin Restaurant.

We helped Queen's University with the KAON sessions (Kingston Astronomy Outreach Network) this year. The nights consisted of great talks at Ellis Hall, then trips up to the observatory with the occasional observing sessions when the sky cooperated. Susan Gagnon is the KAON Coordinator. Thank you Susan and all the volunteers who help out with this public event. The new Queen's Observatory Coordinator is Conner Stone, who took over for Mathew Checker. Throughout the year, Queen's held various talks for the faculty and students through the Physics Department, which members could attend.

This is my last report as Secretary for the Kingston Centre. It has been my pleasure to be able to record our meetings and assist the Executive in any job that was needed to be done.

Kim Hay
Secretary

KITCHENER-WATERLOO CENTRE

- January 12 General Meeting
Rhett Mackend: Canada-France-Hawaii Telescope
- January 26 Stargazers 101 meeting
Khalid Baheyeldin: presented Al-Sufi's book "Book of Fixed Stars."
- February 9 General Meeting
Dustin Lang PhD: Astrometry.net and Finding Comets on the World Wide Web
- February 23 Stargazers 101 meeting
Karol Socander: Spring constellation observing highlights
Telescopes on display showcase
- March 9 General meeting
Steve Holmes: Annual astrophotography contest.
- March 23 Stargazers 101 meeting
Alan Ward: Alan discussed his latest APO refractor that he is building.
Trevor Chandler: How to buy a first telescope
- March 24 Annual dinner for K-W members and guests at Golf's Steakhouse. Astrophotography Contest winners were Andrew Hill (two categories), Ellen Papenburg with sketching, and Rick Dawkins with two categories. Rhett Mackend was awarded the Ray Koenig Award.
- April 13 General Meeting
Khalid Baheyeldin: "Arabic Astronomy."
- April 27 Stargazers 101 meeting
Trevor Chandler: The work of Gerard Kuiper
Rick Burke: Hertzsprung-Russell diagram
- Many star public star parties were held at Waterloo Park in April and May with poor cloudy skies.
- May 11 General meeting
Khalid Baheyeldin: Arabic Star Names
- May 25 Stargazers 101 meeting
Gerry Bissett: Tour of the Large Hadron Collider
- June 14 to 17 General meeting cancelled—instead we met at the club's Equinox Star Party at the Huron Church Camp outside of Bayfield.
- June 22 Stargazers 101 meeting
Mike Renner discussed "Eyepiece design and basic principles of optics."
Ellen Papenburg discussed "Averted vision and observing through the eyepiece."
- July 18 Perimeter Institute Young Physicist camp outing was held at Waterloo Park. Forty young high-school-aged physics enthusiasts from Canada and around the world were treated to telescopic views of the planets and some deep-sky objects.
- July 27 Stargazers 101 at Conestoga Lake Conservation Area was rained out.
- August 12 Perseid Meteor Shower star party
The University of Waterloo held their annual Perseids shower event. Fifteen members with scopes were available with 300 attendees showing up for meteors and excellent planetary viewing.

- August 18 Stargazers 101 meeting
The meeting was held at CLCA. Conditions were not great but views of the planets were featured. Dozens of people participated.
- September 7 General meeting was held one week early to accommodate the Equinox Star Party.
Speakers; RASC150 presentation from the Calgary GA; RASC in travelling mode
Jim Goetz discussed his visit to the new RASC robotic telescope facility.
Jim Goetz also gave a report on the RASC General Assembly in Calgary.
- September 13-15 Equinox Star Party
The club met at the Huron Church Camp near Bayfield and spent the weekend observing.
- September 28 Stargazers 101 meeting
Presentation on the Homer Watson Gallery Exhibit for RASC 150 Clark Muir.
Australia trip astronomy highlights: Gerry Bissett
What's Up with Serg Mammolitti
Attendance exceeded 40+
- October 12 General meeting
James Edgar visited our Centre and presented "Synthesis of Elements in Stars"
- October 26 Stargazers 101 meeting
Rick Burke shared his astronomy trip to Namibia trip to observe the southern sky.
Marie Newnham discussed observing the Moon during favourable librations.
Mike Renner shared how he built a 16-inch mirror for his latest telescope.
- November 9 Annual General Meeting, Wilfred Laurier University 35 in attendance
Dan Hofstadter and Kathryn Shallcross "Large Telescope Projects; How They Translate to Small Telescopes"
Gerry Bissett presenting on his observatory in Baden, Ontario.

Formal AGM notes

There are presently 141 members in the K-W Centre

Leonard Kuehner gave us a recap of the many general and 101 meetings, star parties, and other events.

Treasurer Report: Jeff Dawkins gave us a YTD report on the finances. Total assets \$15,091.26 with some revenue pending due to Homer Watson Gallery exhibit sales. Major expenditure was \$1,019.82 for a new projector.

Secretary Report: Clark Muir discussed a few other events in 2018 including the special edition of the newsletter *Pulsar*, written by Alen Koebel, and the Homer Watson Gallery Exhibit. The 2017 activity report was published in the Society's *Annual Report*.

A new Board was established by acclamation and is as follows

- President: Steve Holmes
- 1VP: Gerry Bissett
- 2VP: Karol Socander
- Treasurer: Trevor Chandler
- Secretary: Ceyda Yetkiner
- 1st National Rep: Jim Goetz

Serg Mammolitti presented the "What's Up" for the months of November and December.

- November 23 Stargazers 101 meeting, First Lego League Science Competition: Participating children presented

- their science projects
- December 13 General Meeting
Jim Goetz talked about his visits to the Yerkes and Lick Observatories.
Serg Mammoliti presented “What’s Up.”
- December 27 Stargazers 101 meeting
Alan Ward presented “Optical Coatings & Oilings for Astronomical Instruments”
Peter Pekurar presented his transformation of his 25-inch telescope.

Clark Muir
Secretary

LONDON CENTRE

2018 has been a busy year again for London Centre. We continue to have our monthly meetings (except for August) every 3rd Friday of the month at Cronyn Observatory on Western University campus. Members continue to use our own observatories outside of London.

We had another busy year with outreach. We continued helping with public nights and special events at Cronyn. Also, we had many star nights with various groups, including schools, camp grounds, Scouts, Girl Guides. We took part in an Astronomy on Tap event with one of our member’s craft brewery Forked River, and with the Astronomy department at Western U. Some of our members also did talks for various groups.

Our membership is down a bit from last year 101 regular, 9 youth and 9 life for a total of 119.

Everett Clark
Secretary

MISSISSAUGA CENTRE

The Mississauga Centre had a successful 2018. The Centre meetings are held on Friday nights at 8:00 p.m. at the University of Toronto Mississauga (UTM), thanks to the generous sponsorship of Dr. Ulrich Krull. There are generally two meetings a month: a speaker night and a potpourri night. On Speaker Nights, an expert in astronomy or a related topic gives a presentation. On Potpourri Nights, members of the Centre give short presentations on astronomy, including observing, equipment, travels, astrophotography, and other areas of personal interest. Member presentations are appreciated and they stimulate ideas and discussion.

In 2018, there were eight Speaker Nights:

- March 9: Dr. Alan Jackson, University of Toronto—Making the Moon
- April 6: Dr. Adam Muzzin, York University—The Most Distant Galaxies in the Universe: What We Know, and What the James Webb Space Telescope Will Tell Us

- May 11: Sara Mazrouei, University of Toronto—Earth’s Battered Moon: Understanding How Impacts from Space Have Shaped Our Planet
- June 8: Dr. John Moores, York University—Solar System Exploration: An Update
- September 28: Michael Watson, RASC Director—Under Southern Skies
- October 26: Dr. Laura Parker, McMaster University—The Dark Universe
- November 23: Dr. Michel Fich, University of Waterloo—New Frontiers in Observational Cosmology
- December 7: Andrew Chaikin, Author, Speaker, and Space Historian—Stories from *Apollo 8* (See below for more information.)

The Centre enjoyed a number of Potpourri Nights and special events:

- There were eleven Potpourri Nights with members giving presentations on areas of interest, including: observing, constellations, astrophotography, space, buying and using equipment, interesting travel destinations, the science of astronomy and physics, teaching astronomy to children, stars through an Indigenous lens, book reviews, and rockets.
- Mississauga Centre Astrophotography Contest: Contest results were announced, and presentations made to the winners.
- Introduction to Astronomy Course: The Centre conducted a public four-night astronomy course given by members in partnership with the Riverwood Conservancy and Earthshine Astronomy and Space Science Organization.
- Public Observing Nights were held at the Riverwood Conservancy, and Members Observing Nights were held at Riverwood and the Forks of the Credit.
- The 4th Annual Auction: Fun for the members and raised money for the Centre.
- The 4th Annual Barbeque and Awards Presentation at Meadowvale Park. A special award was given to the Centre’s Riverwood Eclipse 2017 Group, who went above and beyond the call of duty to handle the 3000 people who turned up at the public event for the 2017 solar eclipse.
- The 2018 Annual General Assembly in Calgary: Several members attended the excellent event hosted by the Calgary Centre.
- NYAA Starfest: Many members enjoyed the presentations, comradery, and dark skies of the star-party weekend near Mt. Forest, Ontario.
- Celebration of the RASC National Star Party public event on September 15 at Riverwood.
- Centre Movie Event: Several members and their families attended the movie *First Man*.
- Special Speaker Event: The Centre arranged a special speaker event for December and invited Andrew Chaikin, the author of *A Man on the Moon: The Voyages of the Apollo Astronauts*. Mr. Chaikin is an expert on the Apollo Moon missions and talked about the *Apollo 8* mission launched 50 years ago in December. The event was held at UTM in a large lecture hall and was open to the public. The event attracted about 165 enthusiastic attendees, who brought and bought books for Mr. Chaikin to sign.
- Centre Newsletter: *Messenger* is published to keep members up-to-date on Centre news and activities.
- In 2018, the Mississauga Centre continued to sponsor the Mississauga Clear Sky Chart.

Mississauga Centre Outreach Numbers for 2018

The total outreach participants were:

- Total participants: 1059
- Total youth: 265 (as a part of the total number of participants)

Thank you to all the Centre volunteers and members for their involvement and enthusiasm.

Sheila Stephenson
Secretary

MONTRÉAL

CENTRE

Once again, terrible weather wreaked havoc on our observing nights. Out of 25 planned members' Wednesday observing nights, only 5 were a go. Out of 18 planned Members' Arbo Clubhouses, only on 5 occasions could members observe. Out of 18 planned members' off-site observing nights, only 11 were a go.

2018 showed a definite growth in our membership. At the end of 2017 we had 141 members, and by the end of 2018, we had grown to a record-breaking 175 strong. We had a significant increase in youth membership, two of which have key roles in our Centre, one is editor of our newsletter *Skyward* and the other our librarian.

Every alternate Friday and Saturday, the club held its weekly meetings at the Morgan Arboretum's conservation centre, only metres away from the Bellevue Observatory. Members gather together to talk astronomy, hear an occasional talk, and, weather permitting, the observatory is opened for observing through the 14-inch Meade Cassegrain telescope. Members can also bring their own telescopes. We had 18 Clubhouse Meetings in 2018

On the Wednesday of the full Moon each month, the Centre holds a Member's Library Clubhouse. Members are able to borrow and return books, talk with other members, show & tell, etc. Sometimes there is a short presentation. 2018 had 6 library Clubhouses.

Montréal Centre allocated 18 evenings, spread over the calendar year, for member's off-site observing nights to allow them to observe in darker skies. We were able to enjoy 11 of the 18 planned dark-sky events.

Public outreach is a strong focal point for the Montréal Centre. We integrated most of the member's events with public events, and we have public observing after the talk, weather permitting. 2018 was not only the RASC Sesquicentennial, but also the Montréal Centre's Centennial. Because of this being a special year, we had an increase of public events, and the public events were extra special, with a total of 17 public events.

Described below are some of our premier public & member events in 2018

September 29 Our Centennial Townsend Lecture featuring Steve Iris, Mission Manager of the RADARSAT Constellation Mission of the Canadian Space Agency & a video featuring Canadian astronaut, David Saint-Jacques.

October 26 Public Event—Spooky Nights—Halloween Under the Stars; 200 children and their parents were in attendance.



Steve Iris



Morrie Protstoff and Steve Iris

November 3 Special event (A Morning at the Movies.) David Shuman and Paul Simard put together a package of films including a 3-D retrospective of past Montréal Centre events, as well as a documentary of the total solar eclipse in August 2017 & 3-D Documentary (Journeys on Mars).



A Morning at the Movies

November 18 Our Annual General Meeting (AGM) (being our Centennial year) was held at the Montréal Aviation Museum. It featured a guided tour of their facilities and some socializing, with light snacks. We also honoured two of our members with the presentation of the Charles M. Good Award to Dr. David Levy and Constantine Papacosmas.



President Morrie Portoff



Aviation Museum tour

June 16 Thanks to the initiative of David Shuman we added a 16-inch Explore Scientific telescope to our premier dark-sky observing site, Woolly Woods.



Our Centennial cake



Frank Tomarus at the BBQ.



Our Members around our new 16" telescope.

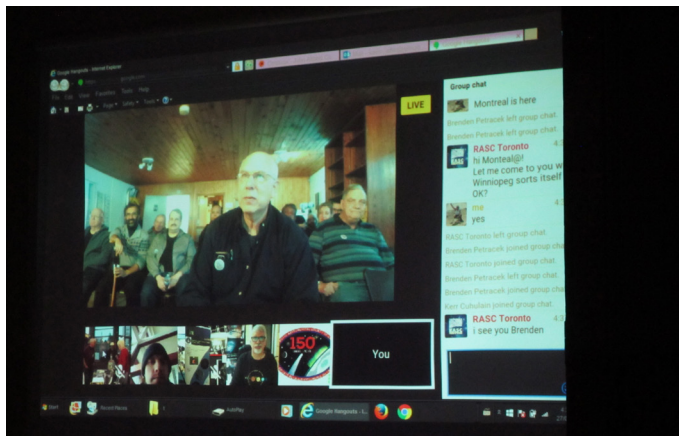
March 28 Grand Opening of our new library in John Abbott College. We named it the I.K. Williamson Library. For this special event, there was a presentation by one of our former presidents, Bettina Forget.



Bettina Forget.

Other Public Events

January 27 The National Star Party
 February 12 Lecture by Richard Leveille Ph.D., Geosciences Dept., JAC "Was Mars Ever Habitable? Five years of exploration with the Curiosity Rover."



Morrie Portnoff: Live video feed across Canada



Santiago Lopez: Observing Workshop

- March 9 "Wonders of the Evening Sky"
- March 24 "Westmount Earth Hour"
- April 11 Lecture by David Levy "Text & Tunes—A Night-watchman's Journey"
- April 21 International Astronomy Day featuring Patrice Scattolin from RASC/SRAC "Astronomy in winter: The Winter Star Party"
- May 19 Jupiter Night talk by John Abbott College (JAC) Prof. Michael Pagano.
- June 23 Saturn Night talk "Cassini's Mission to Saturn" Featuring Emile Lafleche JAC physics student.
- July 21 Mars Night talk by David Shuman "Mars, That Intriguing Planet"
- August 11 Public Observing of the Perseids Meteor Shower.
- August 18 Montréal Aviation Museum Family Fun Day.
- September 15 Public Observing at the Westmount Summit Lookout.
- October 13 International Astronomy Day featuring a presentation "Is this a Planet" by Youssef Bestavros.
- December 13 Public Observing of the Geminids Meteor Shower.

Carl Jorgensen
Secretary



David Shuman: the Solar System

NEW BRUNSWICK

CENTRE



Dr. David H. Levy giving the lecture



The AAR group in the audience

CENTRE FRANCOPHONE
DE
MONTREAL

No report submitted.

At the end of 2018, the New Brunswick Centre membership stood at 105, a decrease of 4 over the year. There were 18 new members, 21 people did not renew, and one member passed away.

Six meetings were held during the year, with three in Moncton, two in Fredericton and one in Saint John. Meetings scheduled for Saint John in January and February were cancelled due to inclement weather; none were scheduled for the summer months and the last two months of the year. The mean attendance was 24 (range 14-40). Meetings consist of a What's Up talk, observing and imaging reports, Show & Tell / Buy & Sell, and presentations by members and guests. Guest presentations in the year included:

- Update on the *James Webb Space Telescope* by NB member and NASA retiree Dr. Ted Gull
- 50 Years in Astronomy by Dr. Ted Gull
- Mi'kmaw Moons and Lunar Observing by Halifax Centre member Dave Chapman

Member-presentation topics included Light-Pollution Abatement, Binocular Observing, Star Parties in 2018, A Brief History of Mars Missions, The Joys of Stargazing, Elementary School Presentation, DSL Long-Exposure Astrophotography, Recap of the 2018 GA in Calgary, Laser Pointer Regulations, Shooting the Moon, and The Moon: Fact or Fiction.

Public outreach is a focal point of Centre activities and in 2018 we reported 182 events that involved 45,246 people. In addition, 1951 Star Finders, 1707 Moon Gazer's Guides, and 180 Getting Started in Astronomy booklets were distributed. The number of people includes nearly 38,000 who viewed live-feed views of the Moon and planets through Chris Curwin's telescope via Facebook, over 28 sessions during the year. Tens of thousands of others subsequently viewed posted recordings of these sessions.

Just over half of the events were for night or day observing, 21% were presentations to schools or youth groups, 25% were presentations to various other groups, and the rest were STEAM-related exhibitions. The events involved an estimated 1340 volunteer hours by Centre members. In total, 46 of the events were targeted for people under the age of 21 through visits to schools, day-care centres, and youth groups, reaching approximately 1300 of the target audience. Many more youth would have attended other events such as public observing.

Four Centre or Council business meetings were held in the year to conduct Centre business. Elections for Centre Council were held at the Annual Meeting in October with the following results.

- President: June MacDonald
- 1VP: Don Kelly
- 2VP: Paul Owen
- Treasurer: Emma MacPhee
- Secretary: Curt Nason
- Councillors: Gerry Allain, Joe Cartwright, Mary King, Chris Weadick

Curt Nason
Secretary

The Niagara Centre had a good year in 2018, filled with observing, public events, regular meetings, and get-togethers.

Our membership had a slight drop this year, going from just over 100 early in the year to the mid-90s by year's end.

Our club produced its fifth calendar, with all the photos taken by our own members. We printed 40, sold out quickly, then printed 10 more. This year we widened the criteria to include more pictures of club events and astro-art, which increased the diversity of pictures and contributors. We were very happy with the quality of submissions and the resulting calendar. Some members bought multiple copies to give to others as gifts.

The Niagara Centre continued a strong tradition of public star nights and daytime talks at museums, libraries, schools, other recreational clubs and private establishments, as well as city, regional, and provincial parks and campgrounds. Our audiences included students of all ages and members of the public from the Niagara Region and further away. When the location has electricity and a proper building or pavilion, our public events usually include a slideshow and informative astronomy talk by Brian Pihack. Brian has developed a working cloud chamber to demonstrate the production of antimatter in our atmosphere. Some teenage members have begun helping Brian with his astronomy and science presentations, demonstrations, and explanations at our public events. So even when our public star nights are completely cloudy, members of the public who turn up can still hear a talk, meet club members, and see telescopes.

Our most commonly used locations for public events are Heartland Forest, a handicapped-accessible park and conservation area in Niagara Falls, Firemen's Park in Niagara Falls, Cindy Drive Park in St. Catharines and the Chippawa Creek Conservation Area in Wellandport, which also hosts the Centre's observatory. We are always looking for new locations and venues.

We have started hosting more teaching and training events for members. One popular session is spring and fall training nights on using the club's equipment at our observatory. For the first time,

one member hosted two beginners' astrophotography sessions at his private backyard observatory. Members with compatible DSLRs were able to photograph a few deep-sky objects and take their pictures home with them all on the same night.

Niagara member Brian Vaughan created a new, mobile-friendly website for the club, with special member's-only features and an improved notification system to keep our club members up to date on events.

Club members travelled to star parties in Ontario and Pennsylvania. Several members went to the Cherry Springs Star Party in June in Pennsylvania. Starfest was well attended. The Black Forest Star Party in Pennsylvania in September was clouded out by hurricane remnants.

A new executive was elected in October 2018 to lead the club for the next two years.

White LED lights and outdoor signs are continuing to appear in the Niagara Region, especially in our two biggest cities, St. Catharines and Niagara Falls, which have taken advantage of subsidized retrofit programs. Hardly any of the lights are full cutoff design, many are too bright and are the wrong colour. We continue to lobby city and regional government to not use these models.

Guest Speakers 2018

January	Philip Downey "Eclipse 2024," Stan Sammy "Messier Marathons," video of Brian Cox "CERN."
February	Brian Vaughan, "The new RASC Niagara website" March: Glen Pidsadnick, "Setting Up and Using a MallinCam" April: Parshati Patel, Western University. "Be Star Formation and Behaviour"
June	Philip Downey "Summer 2018 observing"
September	"Summer Astrophotography" Bob Lewis, Jessica Vaughan, Glen Pidsadnick, and Philip Downey
October	AGM and elections. James Edgar "Synthesis of Elements in Stars"
November	Video of Jocelyn Bell Burnell at the Perimeter Institute

Philip Downey
Secretary





OKANAGAN CENTRE

General

The Okanagan Centre has regular meetings across the Southern Interior of British Columbia. The Centre is organized into three meeting groups to accommodate the three major population centers of Vernon, Kelowna, and Penticton. Each group holds monthly meetings and outreach events in their local areas, and meet together for the AGM, an Annual Fundraising Dinner, and many observing events. The Centre operates the Okanagan Observatory, forty kilometers south-east of Kelowna, near Big White Ski Resort. Our membership in December 2018 was 141, an increase of 6% over the previous year.

Observers in the Okanagan Centre areas experienced another year of extensive smoke from forest fires in B.C., hampering viewing throughout the summer of 2018.

Noteworthy

Colleen O'Hare was a recipient of the RASC Service Award for her outstanding contribution to outreach in our communities. Richard Christie was a Service Award recipient for his continued

leadership at both the national and local level. Grant Rice was also a Service Award recipient for his ongoing commitment and fundraising efforts for our astronomy projects.

MEETING GROUPS AND OUTREACH ACTIVITIES

Penticton Meeting Group

The Penticton group had monthly meetings January to June, and September to December. Presentations were made by Sean Dougherty of the Dominion Radio Astrophysical Observatory (DRAO), and Albert Conrad of the Steward Observatory and Large Binocular Telescope on Mount Graham in Arizona. National Research Council scientist Ken Tapping and local amateur astronomers Dave Gamble, David Hawkins, Sally Kilburg, Dave Whalley, and Mark Force also provided presentations.

Penticton Outreach

The Penticton group participated in several outreach programs including the Meadowlark Festival Night Sky Event where members provided telescopes, star charts and night sky tours for 22 guests. Members provided telescopes and night sky tours for over 600 guests for a Perseids event at the DRAO.

Members were invited to participate with Tin Horn Creek Winery's Night Under the Stars where they shared tips for observing the night sky to over 30 guests.

Penticton members celebrated both Solstices at "Penhenge" on Munson Mountain with public events where members provided equipment to observe the setting sun. The Summer Solstice drew 30 guests to hear members discuss the importance of the solstices. Later in the year, a local First Nations educator talked about local customs surrounding the Winter Solstice. The 70 guests convened at a local winery where European Winter Solstice celebrations were demonstrated by members through multiple displays and presentations.

Vernon Meeting Group

Monthly meetings are held at the Vernon Science Centre, from September through June, featuring regular presentations from Centre members. In 2018, the group completed work on the "Analemmatic Sun Dial" project installed at the Allan Brooks Nature Centre, in Vernon.

Vernon Outreach

The Vernon group enjoyed a very successful year. A continued partnership with the Alan Brooks Nature Centre provided cohosting opportunities, including public observing nights, the opening of the Analemmatic Sundial, participation at their fundraising gala, and a Children's Astronomy Summer Camp. A partnership with the Okanagan Science Centre provided co-hosting for Telescope Workshops to assist the public in evaluation and purchase of telescopes, a summer day camp for kids, and a celebration of Astronomy Day. We assisted the Optimist Club with their program for children, "Unplug and Play," by observing daytime objects using member telescopes. In December, we hosted a public presentation on "Wide-Field Astrophotography Using Mosaics" by professional, award winning photographer Darren Foltinek.

Kelowna Meeting Group

The Kelowna group had a full slate of speakers in 2018, providing excellent lectures on a wide range of topics. Highlights include Nathan Skolski, who shared his experiences working at the Dominion Astrophysical Observatory in Victoria, and Dr. Daniel Vollick of UBC Okanagan. We are fortunate here to have the resources of three Okanagan College campuses, the University of British Columbia Okanagan Campus, and the DRAO at our disposal. Some of the scientists and educators from these institutions are



also members of Okanagan Centre. In addition to the many professionals available to us, the Okanagan Centre has numerous other knowledgeable and talented amateur members able to speak competently on a variety of subjects. We look forward to continued success with our speaker program.

Kelowna Outreach

Led by coordinator Colleen O'Hare, the Kelowna group completed 91 outreach events in 2018 with over 3000 guests being exposed to astronomy education and observing the night sky. This year included school events, monthly visits to the Cancer Rotary Lodge, and five community family events including a Community Science Celebration. Also, on the agenda were kids' camps/groups, adult groups, and Spring & Fall Wine Festivals.

For the fifth year, our members travelled to Mount Revelstoke National Park to assist the Park Service with 7 planetarium shows to over 150 children.

A Teacher's Workshop was held in conjunction with UBC and Okanagan College, where we demonstrated several activities for teachers to use in their classrooms as well as introducing concepts to feel more comfortable when teaching astronomy.

The Kelowna group continued astronomy presentations for Science Literacy Week collaborating with the Okanagan Regional Library, visiting 15 libraries during the year with over 597 guests.

Each Friday night, weather permitting, the Centre hosts a public night at the Okanagan Observatory staffed by Centre members. Heavy smoke caused a number of No-Gos but we enjoyed 9 clear-sky Friday public evenings, hosting 401 guests. Once each month, a "Mobility Bus" service is provided allowing wheelchair-bound individuals and those with difficulty driving at night to visit the Observatory. An articulating telescope eyepiece offers mobility-challenged viewers the ability to share in the experiences.

OKANAGAN OBSERVATORY

The Okanagan Observatory enjoyed a successful season in 2018 with good public attendance at our open nights and a significant uptick in the usage by members for personal observing. Member Christine Janzen led several member nights at the observatory to promote observing and participation in the RASC observing challenges. Some improvement was made to the parking area perimeter ditching in hopes of a better spring runoff; nebular filters were added to the observatory telescope accessories.

ANNUAL FUNDRAISING DINNER

The seventh annual Okanagan Centre Fund-Raising Dinner and Member Social, was held on May 26 at the Kelowna Curling Club. Our speaker was Ken Hewitt-White, astronomy communicator and Associate Editor of *SkyNews*. His well-received topic was "Connecting People to the Stars." The silent auction fundraiser was hugely successful with winning bidders taking home their treasures, and a near-record amount of financial support for the observatory project was realized.

Christine Janzen
Secretary

It's been a productive year for the Ottawa Centre. Our outreach efforts are the most visible things we do, and our public star parties at Carp continue to be very popular. Members-only star parties at the Fred Lossing Observatory (FLO) are also well-attended.

We've made quite a few improvements to FLO—in addition to the 18-inch Starmaster, we will soon have a 14-inch SCT in a separate dome. This will be available to FLO key holders, and we'll be working out details presently. There's a larger mound for setting up your own telescopes, available to all Ottawa Centre members, and a larger parking area. Our window to the south has been widened with the removal of many of the trees that were blocking our view. We're looking into more improvements, based on usage and suggestions. Our relationship with the Mississippi Valley Conservation Authority continues to be cordial and mutually beneficial, and we have good reason to expect this to continue.

For those of you who recall the older 16-inch telescope with fondness, we're happy to report that it will also have a new home and will continue to be preserved for years to come.

The Ottawa Centre continues to have an excellent relationship with the Canada Aviation and Space Museum. One major advantage of our status as a museum affiliate is that we have this meeting venue in exchange for supporting the museum's astronomy-related outreach activities. It's another mutually beneficial partnership that provides considerable value to the Ottawa Centre.

Sadly, we can never avoid mortality. We learned of the demise of Arthur Griffin in September 2017 only after last year's General Assembly, and in 2018, the Ottawa Centre lost Paul Comision, William Dey, and Ian Halliday. I trust you'll join me in saluting their lives and accomplishments, and in honouring their memories.

Ours is an active and energetic club, and as always, we want to acknowledge members who've made outstanding contributions. Making an outstanding contribution in the Ottawa Centre takes effort—we have no shortage of highly capable members.

Paul Sadler, our seemingly tireless star-party organizer, has introduced some much-needed innovations. In addition to proper surveys of what members want from star parties, Paul prepared an extensive analysis of this year's star parties and has more clearly defined the tasks needed to make star parties work. This will help us spread the effort out and make it easier for people to pitch in without taking on too much of a burden.

You've probably noticed that our Centre website is more stable, attractive, and useful than ever. That's due to our webmaster Mick Wilson, who has somehow managed to tame (or at least control) the Web Gremlins.

Danel Polyakov brings talents beyond his years to the challenging task of handling outreach activities. He's made it possible for Ottawa Centre volunteers to share our mutual love of astronomy with groups throughout Ottawa and the surrounding areas. Those dedicated and passionate volunteers include Dave Chisholm, Gerry Shewan, Attilla Danko, Ingrid de Buda, Kelly Jordan, and many others.

As part of our outreach activities, Ingrid de Buda and Attilla Danko have continued to organize and lead our popular Telescope Clinics and the cadre of volunteer telescope whisperers.

Gordon Webster has managed to keep our *AstroNotes* newsletter interesting and relevant. I suspect it's as much due to his ability to encourage and cajole contributors as it is his editorial skills. In addition to that, Gordon has been very active with members' star parties at FLO, and with the ongoing work in upgrading FLO.

Our FLO co-directors, Dave Lauzon and Rick Scholes, have been instrumental in making the Fred Lossing Observatory a facility we can take pride in. Andrew Brown has also used his considerable abilities to help make our second observatory building a reality.

Our monthly meetings are popular and well-attended. A great deal of their success rests on the meeting chair's shoulders; Oscar Echeverri, in addition to his role as the Ottawa Centre Treasurer, has done a masterful job, bringing in some top-notch speakers and re-establishing the popular Observing Challenges.

There are other aspects to monthly meetings that make them special. It's when you get a chance to see our librarian Estelle Rother and find a gem in our Centre library. Outside, Art and Anne Fraser have coffee and cookies ready for our re-cafeination and replenishment.

Some of you have made use of our telescope library. Darren Weatherall continues to keep telescopes and related gear in good working order.

Chris Teron received our first Ottawa Centre President's Award. You know him for his ongoing efforts to keep the monthly meetings running smoothly, but he also does a lot of things that most people don't know about. On the org chart, he's the Ottawa Centre Secretary, but he's also our liaison with the Canada Aviation and Space Museum (CASM), the Centre's de facto historian and lore master, and the default host of our Council Meetings. In addition to that, he's got a long history of acting as the Ottawa Centre's resident designer and builder. Over the last two years Chris has put a lot of work into the planning and organization behind the FLO upgrades, and has also done some of the literal heavy lifting out there. Louisa, Chris's wife, deserves a lot of the credit for all that, too.

The President's Award was created as something to have available in our back pocket, something to honour someone who's run out of awards to get. I guess it shouldn't have surprised me that Chris would be first one to earn it.

While we're mentioning awards, Mike Moghadam received the 2018 Qilak Award.

These aren't the only people who generously donate enormous time and skills to the Ottawa Centre. All of you who volunteer your services merit our gratitude, and we can't continue to function without you.

It's been an honour to have served as President of the Ottawa Centre, and to be associated with you all. The Ottawa Centre is in good hands with our new Council, and I look forward to our club continuing to be a valuable part of our lives for years to come.

Tim Cole
President

Two dedicated members conducted 9 outreach activities during the summer at Mount Robson Park, attracting a total of 212 visitors. Two of the presentations occurred at Whitehorn, an 11-km hike up the Berg Lake trail. Activities included lectures and hands on telescope experience. The presentations were enhanced with the use of a chargeable mini projector and screen mounted in the open-air shelter. Mount Robson is a popular tourist attraction approximately 290 km east of Prince George.

Our members in Williams Lake are busy with outreach as well, organizing a two-evening astronomy course consisting of classroom and observing activities. They also invite neighbours to join in when doing informal viewing in the neighbourhood. Williams Lake is approximately 240 km south of Prince George.

Tour attendance and Open Nights' attendance at the observatory are up. The Perseids drew a large number for poor sky conditions. A scheduled binocular open clusters marathon was clouded out but a presentation on the Antikythera Mechanism was given.

A new 10-inch Dobsonian GoTo and tracking scope was purchased for public viewing that saves a lot of time re-finding and centring objects when the telescope is accidentally moved by viewers.

A joint effort with Exploration Place and the HR MacMillan Space Centre in November drew about 600 people. Centre members took the opportunity to promote the observatory and teach the attending public how to use a telescope and how to use Star Finders. This event was held at the local museum.

Our booth set up at the Canada Day Lheidle T'Enneh park festivities attracted over 700 visitors. Telescopes equipped for solar viewing were a big attraction.

Introduction to Astronomy, a locally developed course, focuses (ha ha) on how telescopes work, how to use them, objects in the night sky, and requirements for earning the Explore the Moon and Explore the Universe certificates. This course, held in September and November was well attended. Continually evolving, this new course was evaluated by the students and some changes will be implemented to help improve the experience.

Using the observatory's 0.6-m telescope, ST10XME CCD camera, and an infrared DSLR camera, two members are working on a project entitled North Optical Sky Survey. They are creating a map of the sky visible from our observatory in visible wavelength using BVR wave bands and an infrared DSLR Camera. While doing the survey these two individuals discovered an FII Type Nova in M31. The Nova was designated AT2018hoo. There are high possibilities of finding more supernovae, CVs, and Flare Stars in some galaxies.

Plans are in the works for a 2020 fall weekend star party.

There were approximately 1900 visitors to various open houses, tours, and special events hosted by Prince George Centre.

Glen Harris
Secretary

The RASC Regina Centre's activities reached over 2300 people, of which 1200 were children or youth. This is pretty amazing when you consider our single biggest event (Canada Day) was cancelled at the last minute this year because of a First Nations protest in Wascana Park.

We had 27 members support these outreach activities, which represents one third of our membership. This is quite impressive when you consider many of our members are spread all over rural southern Saskatchewan.

The following two sections provide a summary of our Public and Member events in 2018. It is by no means exhaustive but gives a good sense of what we do in southern Saskatchewan.

2018 Public Outreach Events

Paul Meyer deserves special recognition for his efforts in coordinating these events that reach well over 1300 people each year. The following is a sampling:

- 30 Jan Dr.A.E. Perry School—presented to 50 kids plus provided solar viewing the next week.
- 17 Apr Seven Stones Community School—presented to 60 kids.
- 21 Apr International Astronomy Day at Southland Mall—reached 360 people, one of the best years to date.
- 19 May Grasslands National Park, East Block—had over 110 people, supported by members from both Regina and Saskatoon Centres.
- 26 May Cathedral Arts Festival—in spite of some weather challenges, we had over 230 people.
- 21 Jun Katepwa Lake—Grade 7/8 school field trip with 25 students.
- 01 Jul Canada Day—this is usually a huge event for us but it didn't happen this year due to the event's relocation.
- 12 Jul Estevan Souris Valley Museum was attended by 12 people.
- 28 Jul Good Spirit Provincial Park—helped the park host 26 people.
- 10/11 Aug The Saskatchewan Summer Star Party is a major event for our Centre and reached 80 people for solar viewing and 225 for planet and deep-sky viewing, even with poor conditions on one night.
- 17 Aug Echo Lake Provincial Park—we hosted 15 people.
- 22 Sep Believe in the Gold—is an event in support of childhood cancer that we assist. Unfortunately, the solar viewing was clouded out.
- 13 Oct Wolseley Library—after years of weather cancellations the event occurred this year, but a Rider's game conflict resulted in less than 10 people.
- 17 Oct Sunrise Library—this event was a sell out with 35 people.
- 25 Oct Science Centre—Adult Night—we helped the Science Centre with their event that had 88 people.

Throughout the year some of us do ad hoc sidewalk astronomy and we have reached over 150 people.

The one thing all these events have in common is the need for a dedicated team of volunteers. The following members supported these events. My apologies for any I may have missed from this list.

Kevin Bird, Robert Brann, Fred Cawsey, Darcy Conn, Kevin Fenwick, Alden Foraie, Peter Hagar, Ron Haughey, Gerry Hodges, Joan Hodgins, Frances Israel, Shane Ludtke, Sayed Khan, Faiza Khan, Mimi Martin, Len McDonald, Paul Meyer, Don Moreau, Mike O'Brien, Vance Petriew, Denis Pilon, Pierre Schierle, Katelyn Schierle, Jerry Shen, Ian Sloman, Greg Swanson, Malcolm Warren. In addition, James Edgar conducted a stargazing night at Good Spirit Provincial Park in August, which attracted about 30 campers and their children.

Besides these public events, the Kalium Observatory team volunteered over 40 nights/230 hours and reached another 900 people, of which 425 were children or youth. Thank you to: Ron Haughey, Francis Israel, Len McDonald, Jerry Shen, Malcolm Warren

2018 Members Events

We were also active with member events. The following are a few examples:

- 27 Jan RASC 150th Dinner with a presentation by Vance Petriew.
- 17 Mar Messier Marathon clouded out.
- 06 Apr Paul Gray presented "Shedding Light on Dark Nebulae"
- 11 May Dr. Fran Bagenal, NASA's Juno and New Horizons plasma investigations team leader presented on the Juno mission to Jupiter.
- 16 Jun Star-B-Que at Davin.
- 08 - 13 Aug Saskatchewan Summer Star Party at Cypress Hills DSP
- 07 Dec Notanee Bourassa presented on the Aurora and STEVE.
- 19 Dec Christmas dinner.

Pierre Schierle
President



St. John's Centre had a very active year with 10 public meetings along with two Annual Star Parties, Astronomy Day, Science Literacy at the Mall, public observing sessions (very popular Observe the Moon Nights) and a dozen special events (National Star Party,

RASC 150 celebrations, MARS, Dark Sky Preserve launch). Our Internet presence via Webpage,

Twitter, Instagram and Facebook continues a renewed interest in Astronomy and enhanced public awareness. An increasing number of members continue to advance efforts in Astrophotography with

tremendous results. Mars was a 'hot-topic' for several months and spawned several observing events with tremendous public interest. A recent bump in membership may be the result of these activities.

We now have our first established Dark Sky Preserve with the hope to have another operational within a year or so. This was made possible through the hard work by Park Canada Staff and our



Signal Hill Historic Sites Days, July 7. Image by Craig Peterman

our Executive team. Our Annual Star Party at the Preserve is very well attended.

We have broadened our group of event partners to include Parks Canada, Johnson Geo Centre, Salmonier Nature Preserve, Admiralty House Museum, NL Folk Festival.

Our membership year runs from October's Annual General Meeting through September with no planned public meetings during July and August. Fortunately we haven't been short of topics for speakers and were able to program two Member's Nights.

A Christmas Ornament was made as a special thank-you for Executive members for all the hard work during the year. Was also a hit with National Office!

Meeting highlights

- October 2017 Annual General Meeting and Election of Officers. Review of the year's meetings and events. Recent member astrophotographs.
- November 2017 Member's Night—short member presentations and photos.
- December 2017 Short-talk—Garry Dymond's astro-trip to Australia. Social—RASC calendars were offered for sale and the audience was invited to partake in a festive celebration.
- January 2018 Lecture—Dr. Steve Bruneau—building a home-observatory in a harsh northern climate. Illustrated with photos and plans.



National Star Party, September 13. Image by Randy Dodge

- February Lecture—Garry Dymond—Demasduit's Comet—Indigenous history in Newfoundland.
- March Lecture—Dr. Svetlana Barkanova—tour of the Memorial University Grenfell Observatory and outreach activities in western Newfoundland.
- April Lecture—Dr. Hari Kunduri—A student of Dr. Stephen Hawking remembers him and his work.
- May Short Talk—Dr. Mike Morrow—Dr. Herbert Gush, The Rocket Scientist
- June Member's Night
Summer Plans—10 outreach events over the summer, a record!
- September Lecture—Dr. Ivan Booth—Neutron Star Collisions. Part of Science Literacy Week
A review of summer activities.

Outreach Activities

- Jan 27, 2018 RASC 150 at the Geo Centre, remarkable clear skies (one of few across the country), busy day with hundreds of people.
- May 18/19 DSP launch at Terra Nova National Park with public activities and observing day and night
- June 22 Salmonier Nature Preserve—Public Observing
- July 7 Signal Hill National Historic Site—Public Observing
- July 31 MARS Day—Johnson Geo Centre, indoor activities, solar observing MARS observing event (500 people)
- Aug 4/5 NL Folk Festival—Partner with Parks Canada for public meet/greet and solar observing.
- Aug 10/11 Terra Nova Star Party Weekend (300 people)
- Aug 17/18 Butterpot Star Party—Annual Centre Star Party Weekend
- Sept 15 Signal Hill—National Star Party (300 people)
- Sept 16 Avalon Mall—Science Literacy Week display.
- Sept 20 Johnson Geo Centre—Space Carnival (200 people)
- Sept 21 Admiralty House Star Party (100 people)

Extensive use of RASC material (Star Wheels, Moon Guides, *Skynews*) at all outreach events.

We are a small centre, but have managed to replace fall-offs with new members, both young and old, and there's been a recent uptick in membership. We are empowered by public participation and the opportunity to embrace their interest in Astronomy.

We look forward to more events where we can show the public the true nature of the RASC.

Randy Dodge
Secretary

SARNIA CENTRE

We carry about 16 members, meeting monthly for 10 months of the year (we take a break in the summer). We take turns making presentations and sometimes have guest presenters come in for our meetings.

This year a number of our younger members have made presentations about upcoming observation opportunities, reports on the moon and other objects they have been observing and their work in astrophotography.

We participate in national astronomy day by setting up at a local park and inviting the public to come and view. This past year we had 30-40 people drop in with about half of them being under 21.

Many of our members attend Starfest.

In the summer we participate in the City of Sarnia's Hobbyfest, an event for the public to come out and learn about many of the different hobby groups that operate in Sarnia. Hundreds of people attend Hobbyfest both young and old. (see pictures)



We assist local groups who would like a presentation on stargazing such as nature groups and Scouting groups. We had a group of about 15 participate this year.

Various members get together to go camping and stargazing throughout the summer and some gather on clear evenings to observe. A few of our members participate in astrophotography.

We maintain a website and a Facebook page.

For small numbers, we keep busy.

Stefan Jackson
Secretary

Monthly Meetings and Presentations:

January 15	Ron Waldron: Norwegian Astronomy above the Arctic Circle
February 12	Tim Yaworski: The Best Camera is the One You Have with You
March 19	Alan Duffy: Standard vs. Drizzle vs. Bayer Drizzle—Image Integration for Astrophotos
April 16	Krista Trinder: Photography of the Night Sky, Aurora, and STEVE
May 14	Public Talk by Dr. Fran Bagenal: NASA's Juno Mission to Jupiter: What's Inside the Giant Planet?
June 18	Tenho Tuomi: Astrophotography projects over the years—from planets to deep sky, from film to digital
September 18	Alan Duffy: Results from the Saskatoon Membership Survey
October 15	Marcel Mueller-Goldkuhle: The October Night Sky Daryl Janzen: Astronomy programming and facilities at the University of Saskatchewan
November 19	Marcel Mueller-Goldkuhle: The November Night Sky Tenho Tuomi: Comet 46P/Wirtanen's Favourable Approach
December 10:	Centre Christmas Social and Potluck

Observers Group Meetings at the Sleaford Observatory

The Observers Group meeting, organized by Larry Scott, occurs monthly, weather permitting.

Public Outreach Activities

Youth Astronomy Club: Eight meetings were held at the U of S Observatory—membership ranged from 4 to 7 members at each meeting. Assistance at the meetings was given by Errol Frazer-Harrison and Mark DeJong. Presentations were given by Rick Huziak and Daryl Chatfield.

May 18–20: Patty Gakis and Rick Huziak supported the Regina Centre at the Grasslands National Park East Star Party. Lectures and Star Nights attracted about 50 to 100 people.

June 12: Rick Huziak and Norma Jensen supported the National Parks Media Tour where Grasslands promoted the Dark-Sky Preserve to national media writers and photographers, National Parks Head Office staff, and to Tourism Saskatchewan.

July 14–16: Rick Huziak and the Regina Centre put on a Starnight for the West Block of the Grasslands National Park, about 120 people enjoyed the pristine naked-eye, magnitude-8 skies.

August 8–13: 22nd Annual Saskatchewan Summer Star Party with 326 registered participants.

Speakers: Dr. Michael Earl, Ron Waldron, Alister Ling, with Alister Ling and Jim Goodridge doing night clinics. The sponsored public solar observing session, the public amphitheatre talk, and the two-night public starnights at the Cypress Observatory (run by the Park interpreters and the SSSP volunteers from the Regina Centre) attracted over 500 park campers.

October 27: Dark Sky at the Creek (Beaver Creek), attendance was about 200 with 60% being under 21.

Light-pollution awareness outreach was continued in 2018 with



RASC President's Award presented to Rick Huziak.

many light-pollution-based lectures and events including:

- Two light-pollution themed Jane's Walks at the Saskatoon Winterruption Festival (January 19 & 20)
- Work with 4th-year University of Saskatchewan Sustainability Studies students to create an outline for a university level light-pollution class
- Interview with Saskatchewan Tourism for a Dark-sky Tourism webpage
- Interview with *Frontier* magazine for the Preserving the Night Sky article
- Jane's Walk on May 5 to promote the need for darkness at the Saskatoon Northeast Swale
- Nightwalk for City of Saskatoon lighting staff
- NE Swale tour with Urban Design students on Sept. 20
- In-class lecture on Sept. 21 for Andrea Regier's grade 10 Environmental Studies class at Bishop Mahoney High School
- Public starnight for Vanscoy School on Oct 10
- October 22 lecture for 75 teacher candidates
- Two Nov. 27 class presentations for grade 5 & 8 students at Saint Ann's School

Work also continues with light-pollution issues with the City of Saskatoon and around the province.

Special Events

The Saskatoon Centre celebrated its 50th anniversary in 2018.

September 15: Members of the Centre participated in the Major Cleanup of the U of S Observatory

Award Recipients

The President's Award was presented to Richard Huziak at the 2018 RASC General Assembly in Calgary by outgoing President Colin Haig. It was for promotion of the RASC, education within the RASC, and for efforts in light-pollution abatement.

Marcel Muller-Goldkuhle

Secretary

For the Sunshine Coast Centre, 2018 was another year full of hard work, public engagement, and intriguing observation for club members and the public.

Our Executive held ten meetings, including the Annual General Meeting in October when there was some change in the Executive team. We have three females on the current Board of eight, and discussion has been started about reaching out further to encourage new members and executive from diverse communities. The new Board is working hard on a written manual of policies and procedures, an ongoing project. The Librarian has updated the inventory of books and equipment available for loan to members.

Centre members were very busy with outreach at local public events. These included a total of 39 events in 2018, made up of our monthly Public Speaker Meetings and 12 special events. The special events included three local groups attending the observatory (Boy Scouts, Girl Guides, and a local ecological support group), and nine outreach booths at local community events. These were organized and presented by member volunteers, many with their own scopes to share solar viewing with the public. Total attendance (members and public) for all events was 1790 visits, supported by 181 total volunteer dates (a number of members making repeated appearances), and 656 hours of volunteer time dedicated to outreach.

A very special event was a show at the local Art Gallery, "Worldly Wonders," which was comprised of the astrophotos of local member and widely acclaimed photographer Erwin Diener. This particular event served as outreach and fundraiser, and was very popular in the community.

Our Past President and RASC 2nd Vice-President, Charles Ennis, continues to shepherd the Coast Cable television series "Night Lights," an ongoing program featuring all aspects of astronomy. The program was developed locally but has now been taken up by a few other outlets. In 2018, the program was renewed for four more seasons.

Our observatory was the subject of a lot of attention this year, from the club and the public. Members spent hundreds of hours improving and maintaining the site. While we are currently working on a reliable method of recording volunteer hours of work at the observatory, one member reported 380 hours for the year. In 2019, volunteer hours at the observatory will be more carefully recorded. As well, equipment and infrastructure were enhanced this year, and the club has applied for a New Horizons grant to further improve the facility's site and accessibility. The club hosted 363 observing visits by members and the public, well surpassing the number of visits in any previous year.

The Centre has, however, faced an ongoing challenge with lobbying local governments for not only verbal support, but action in pursuit of the Dark Skies program. Our community, like so many others, is facing pressures from development and the club is working to make preemptive changes to lighting regulations as well as altering current lighting to recognize the need to reduce light pollution. This work will be continuing.

As shown, our small club had a busy and productive 2018. We will continue efforts in the areas of outreach, membership, diversity, accessibility, and community enhancement. We look forward to another successful year in 2019.

Gwen Willox
Secretary

Summary

Centre Meetings: The Centre held 10 monthly meetings, from September to June. The meetings were held at the David Thompson Astronomical Observatory located at Fort William Historical Park.

Attendance

Most meetings had between 10-15 people in attendance.

Membership

As of December 2018, there are 48 members.

Centre Executive

- President Brendon Roy
- Vice-President Doug Stuart
- Treasurer Brigitte Schaffer
- Secretary Andreas Buchholz
- National Rep. Mitchell Bagdon

Meeting Format

Centre Business

The meeting starts with the Centre's business. The topics discussed are any events such as outreach activities of the past month, what's happening at national, any policy changes the members need to be aware of and events that the centre will be involved in for the coming months.

Astronomy News

President Brendon Roy presents the major astronomy news of the past month.

Presentations

Members or guest speakers give presentations on topics of their choice or on topics of request from the membership.

Sky Guide

President Brendon Roy presents Naked Eye To Deep Sky (started by charter member Ted Bronson) to give celestial targets to the members for the next month.

Monthly Observing

Every fourth Thursday of the month the members are invited to do some observing at our designated viewing location, which was Boulevard Lake. Since October, we are on a new observing site at Jackpine Community Centre on Oliver Road. We typically have anywhere from 3 to 5 members come out.

Annual Meeting

Our annual meeting occurs every October.

Winter Outreach

Science Carnival, February 2018

This year, Science North held their Science Carnival at Victoriaville Mall. Two members of the Centre attended and we had two telescopes set up at the display. Star Finders and Moon Gazer's Guides were well received by both children and adults. Our Phases of the Moon box was also a big hit.

Northwestern Ontario Regional Science Fair, April 2018

This year's Science Fair had many entries with a wide range of topics, including 4 or 5 with an astronomy theme. The Centre had

two members attend and we provided astronomy-themed games and prizes for the children as well as solar viewing available outside.

Summer Outreach

- Creekside Nursery—June 2018
- Kakabeka Falls Provincial Park—July 2018
- Blue Lake Provincial Park - July 2018
- Quetico Provincial Park—August 2018
- Our Kids Count - August 2018
- Sleeping Giant Provincial Park—September 2018

Guest Speakers

For our March meeting, we had Paul Gray from the Halifax Centre fly in to talk to us about “Detecting Supernovae as an Amateur Astronomer.” He detailed for us the evolution of detection methods over the years, as well as showing us the way he inspired his own children to become supernova hunters too.

Awards

Our very own Ed Essex and Bob McLean completed the “Explore the Moon - Binocular Program” this year and were awarded their Certificates of Completion at our September 2018 Centre meeting. Congratulations!

Monthly Talks

January	Andy Buchholz: Moon Phases and the Stock Market
February	Brendon Roy: Toledo School of Translation
March	Paul Gray: Supernovae
April	Ted Bronson: Observing Solar System Objects
May	Brendon Roy: Nova Observing/Reporting
June	Brendon Roy: Thunder Bay Centre - Year In Review Brendon Roy: Mars at Opposition in July 2018
September	Ed Essex: Explore the Moon with Binoculars
October	Brendon Roy: A Brief Intro to the Kuiper Belt and Oort Cloud
November	
December	Brendon Roy: Future Cities in Venus's Clouds

Andreas Buchholz

Secretary



Meetings

As usual, Paul Markov hosted most Recreational Astronomy Nights and Paul Delaney hosted most Speaker Nights, with Chris Vaughan hosting the October and January RAN and Tom Luton hosting the June and August RAN and the October Speaker's Night. All meetings were held in Studio 2 of the Ontario Science Centre. Andrew and Elizabeth Reid and Ward LeGrow handled setting up and streaming our talks on the internet, and then editing our talks into shorter clips for YouTube. Past talks can be viewed on the Toronto Centre's YouTube channel.

Telescope Loan Program

Telescopes are borrowed for periods of two to four weeks. This is a very popular program managed by Marc Teitelbaum, George Slavinski, and Peter Richards.

Observing Programs

Steve McKinney, Marc Teitelbaum, Peter Richards, Jeff Booth, Arnold Brody, Eric Peters, Adrian Aberdeen, and Rick Foster all took turns hosting monthly star parties at Bayview Village Park & Long Sault Conservation Area, which were well attended. Other impromptu events attracted even more people throughout the Greater Toronto Area.

Weather conditions were better than average this past year, with City Star Parties being held in 10 of the 12 months, just missing December and January. Conditions for Dark-Sky Star Parties are more restrictive than for City Star Parties. Even so, we were successful in holding 8 events, missing January, March, April, and August. The June and July events saw close to 100 members and non-members enjoying the views.

Education and Public Outreach

The Toronto Centre Education and Public Outreach Committee (EPO) reached out to over 20,500 members of the public during this reporting period. This was done through various means, including our NOVA (New Observers to Visual Astronomy) course, monthly solar observing at the Ontario Science Centre, multiple school and Scout events across the Greater Toronto Area, our First Light course for new members, and major star parties, such as the RASC National Star Party and the Dunlap Institute Star Party. The Centre also restarted outreach at the David Dunlap Observatory in the summer of 2018, after a two year hiatus.

E.C. Carr Astronomical Observatory (CAO)

The year was a milestone as we celebrated the 20th anniversary of the official CAO opening to the members of the Toronto Centre. During 2018, the CAO hosted four Scout and Venturer weekends, two Thornbury Library presentations with observing through telescopes, a Probus group, and a Beaver Valley Bruce Trail group.

The CAO also held special events during 2018 for its members, including two work parties to maintain the facility in tip-top shape, a rocket building workshop, the annual Awards Picnic that celebrated both the Toronto Centre's 150th anniversary and the CAO's 20th anniversary, plus an advanced astrophotography workshop.

Web Team

The Centre's website reach decreased to 42,497 visitors (-15%). The previous period was particularly busy because of the solar eclipse in August. Over the summer of 2018, traffic on the website has picked up again because of the DDO programming. Around 450 events, news items, and articles were posted or updated during the reporting period. Our efforts on social media paid off. At the time of writing we have 1536 followers (last year: 992) on Twitter and 1175 (last year: 1283) likes on Facebook. This year we started an Instagram account and have 183 followers at the time of writing.

Tom Luton

Secretary

In 2018, we have continued to deliver on our mission to advance education in astronomy and allied sciences by providing presentations, workshops, seminars, and outreach programs in British Columbia in general and the Vancouver area in particular. This year we featured:

- 11 guest lecturers all free and open to the general public
- 15 community events
- 14 events with the education community
- 6 Nova newsletters
- Numerous appearances on TV
- Discussions with various levels of government about light pollution and abatement.

We have continued our collaborations with SFU and Metro Parks; Astronomy Day (in conjunction with Science Rendezvous at Simon Fraser University) saw ~1,000 visitors, and the Perseid meteor shower and observing at Aldergrove Lake Park (with Metro Parks) saw ~1,200 visitors. One of this year's highlights was the Astronomy Weekend at Manning Park.

Our partnership with SFU has continued in 2018. The Vancouver Centre has supported SFU in the Starry Nights public outreach program and our imaging group is making use of the time allotment for the Trotter Observatory.

Vancouver created and distributed 6 issues of our free astronomy newsletter NOVA, published bi-monthly with an exclusive issue for Astronomy Day in May.

Several Vancouver members have made television and radio appearances, including Scott McGillivray's regular educational astronomy segment on Global Television, "Space Talk with Scott."

The Paul Sykes Memorial Lecture featured Dr. Nancy Chabot of Johns Hopkins University and member of the Mercury MESSENGER Mission. She spoke about finding ice on Mercury and what that tells us about planets and the history of the Solar System.

Our membership continues to grow, finishing the year with 258 members, up from 251 last year and 233 the year before.

Over the year we featured the following speakers in our public monthly meetings:

Paul Sykes Memorial Lecture

	Dr. Nancy Chabot - Johns Hopkins University, member of the MESSENGER Mission—Ice On Mercury
January	Terence Lee—RADARSAT and Sapphire Projects
February	Dr. Sean Dougherty, Director of ALMA
March	Robert Conrad & Matt Cimone
April	Dr. John Walker from TRIUMF—The history of Neutrinos
May	Dr. William Wall —The Large Millimetre Telescope, Alfonso Serrano
June	Dr. Jaymie Matthews—What will astronomy be like in 2118?
July	Telescope workshop
September	Dr. Richard Shaw—The search for dark energy at CHIME radio telescope
October	Chris Gainor & Sarah Savi Kallesøe—Hubble Space Telescope

November Dr. Christa Van Laerhoven—Finding Pluto's Compatriots

December Dr. William Wall

Events

January 27	RASC 150th Anniversary Celebration Opening Event
March 24	Night Quest with Metro Parks at UBC Spirit Park
April 28	Club Day at Vancouver Public Library
May 5	Fingerling Festival in Port Moody.
May 12	Astronomy Day and Science Rendezvous at SFU
July 1	Canada Day at Memorial Peace Park in Maple Ridge
July 14	Belcarra park
July 27	Aldergrove Lake Regional Park
August 11	Perseid Meteor Shower at Aldergrove Lake Regional Park
August 18	Starry Nights at Deas Island Regional Park.
August 26	Kanaka Creek Stewardship centre ecology and light pollution.
September 8	Summit Lodge Squamish. Telescopes and volunteers to back up talk by "NASA Jim."
September 15	RASC National Star Party.
October 12	Astronomy Weekend at Manning Park.
November 23	Annual Science Bash at Richmond Public Library.

Education

January 14	Observational Astronomy Workshop Fraser Valley Library Association telescope loaner program
February 4	Observational Astronomy Workshop
April 4	Cub Scouts Coquitlam astronomy badge
May 3	Suncrest Elementary School gifted student program
May 4	Pleasantville Elementary School's Night of Science (NOS).
May 4	Brownies Camp Capilano in North Vancouver
June 6	Solar viewing at Lena Shaw Elementary
July	Burnaby Correctional Centre
September 17	Science Literacy Week
September 28	Alouette Guides in Maple Ridge
November 10	Observational Astronomy Workshop
November 27	Stellarium Workshop
November 25	Virtual Online Stellarium Workshop

Olivier Eymere
Secretary

Summary

Both membership and the activity level of the Victoria Centre continued to increase in 2018. Membership was 273 members as of October 1, with an annual average of 260. The Centre co-lead the organization of another series of summer star parties at the Dominion Astrophysical Observatory (DAO); a total of 19 evenings were held this year from the end of April to late September. We held our annual RASCals Star Party at a new site in Central Saanich. Unfortunately, cloudy weather meant only one member made a few observations in the wee hours of Saturday morning.

Monthly meetings and the summer star parties included many presentations given by professional astronomers from the University of Victoria and Herzberg Astronomy and Astrophysics Research Centre (NRC). The Centre's weekly Astronomy Café meetings have continued to be popular with both members and the public. We have been using our new telescope at the Centre observatory when the opportunities present.

Outreach Summary

- Total Galileo Moments—over 8,000
- RASC members participating—more than 40

Presentations, RASC information tables, solar viewing and/or night sky sessions were given at: schools, cub/scout/guide groups, seniors' homes, International Astronomy Day, the Saanich Fair, and other community events. RASC members also judged and awarded prizes at the Vancouver Island Regional Science Fair. Public activities were organized by Ken Mallory as outreach coordinator.

Schools Program

Under the leadership of Sid Sidhu and through the dedication of Lauri Roche and a core group of Centre members, we continue to offer a schools' program that is in high demand. During the school year, there may be as many as ten classroom presentations each week, with frequent night-sky viewing.

Outreach Events

RASC National Star Party—January 27

RASC Victoria members met on Saturday, January 27, at the Bob Wright Centre at the University of Victoria to celebrate 150 years of RASC astronomy in Canada. We were joined by astronomy teachers and students from the University of Victoria, Camosun College, and Victoria High School. Tours of UVic's 32-inch telescope and solar observing were offered. Members participated in the broadcast involving RASC Centres from across Canada.

Vancouver Island Regional Science Fair—April 9 to 10

Three student projects had an astronomy angle at this year's science fair. Victoria Centre volunteers were judges, and we awarded prizes.

International Astronomy Day—April 21

Ken Mallory, Outreach Coordinator, organized our annual Astronomy Day at the Royal British Columbia Museum during the day and Centre of the Universe on Observatory Hill in the evening. Daytime activities included lectures, displays including astrophotography, telescopes, and planetarium software. Participants included the University of Victoria, Camosun College, Pearson College, and the National Research Council. Kid's activities and an ask-the-astronomer table are part of this event, which was held at the Royal British Columbia Museum. Approximately 800 people attended the day event, and another 200 attended the night event.

DAO Summer Star Parties—Saturdays from April 21 to September 1.

A total of 19 Summer Star Parties were held on Saturday evenings. Attendance averaged 200 per night. At each event, RASCals generously shared their time, expertise, knowledge, and telescopes with the public. Centre member David Lee organized the nightly presentations delivered by RASC members and professional astronomers. Tours of the historic Plaskett Telescope were offered, with trained Centre members serving as telescope operators.

The Centre of the Universe planetarium was well used giving numerous shows each evening. A virtual-reality display by the NRC proved very popular. These evenings were held in partnership with the Friends of the DAO (FDAO) and the NRC. A thank-you event for the volunteers was held on September 15.



Victoria Centre AGM, image by Joe Carr



National Star Party, image by Joe Carr

Plaskett Telescope 100th Anniversary Celebration—May 3

Many members of the Victoria Centre were invited to the Plaskett Telescope centenary celebration. Centre President, Chris Purse, was one of the speakers at this event. A National Historic Site plaque was debuted by Parks Canada.

Victoria Day Parade—May 21

Members from both Victoria Centre and the FDAO walked in the Victoria Day Parade this year for the first time. Fun was had by all at this popular and lively event!

CASCA Annual Conference—May 22 - 26

The CASCA 2018 conference was held in Victoria. RASC members were offered a special rate, and the conference was a great experience for those who were able to attend. The organizers supplied a table for the use of Victoria Centre and the FDAO to give out information to delegates. A thank you letter was sent to the organizers.

Saanich Strawberry Festival—July 7

Approximately 700 people stopped by the RASC booth at this festival. Sky conditions were quite good, so numerous people were able to see the Sun through our solar telescopes.

Fort Rodd Hill Star Party & Gulf Islands National Park Reserve, Pender Island—August 10

This popular star party on the grounds of the Fort Rodd Hill National Historic Site was attended by 239 members of the public and 13 RASC volunteers. Parks Canada organized this event that coincided with the peak of the Perseid meteor shower and a new Moon. Numerous families camped overnight and enjoyed looking at the night sky through Centre members' telescopes. Sky condi-

tions were fair with some forest fire smoke impacting the seeing. Scott Mair gave a popular presentation.

A second event the same weekend was held on Pender Island near Otter Bay with Lauri Roche and her telescope. About 200 people enjoyed the night sky from this location.

Saanich Fair—September 1 to 3

Approximately 2,000 visitors stopped by the Victoria Centre's booth at the Saanich Fair. We were treated to generally good viewing conditions. Thirty RASC members volunteered over the 3 days, and a telescope was given away as a prize.

RASCals Star Party—September 7 to 9

We secured a new site for the star party this year on the grounds of St. Stephen's Church in Central Saanich. Unfortunately, the weather did not cooperate, but we did have approximately 30 people attend who heard talks by Centre members Miles Paul, Dorothy Paul, Bill Weir, Nelson Walker, and David Lee. We also had our first Star-B-Q, which was appreciated by all, considering the inclement weather.

Fall Fairfield Fete—September 22

This public event was held by the Fairfield Gonzales Community Association at the site where we hold our weekly Astronomy Café. Weather conditions were not favourable with only limited viewing possible later in the afternoon.

Science Literacy Week at Esquimalt Gorge Park—September 22

A small group gathered to hear astronomy talks by two UVic astronomy students and Dorothy Paul. Night sky viewing was planned but did not occur due to prevailing cloudy conditions.

On the Construction of the Heaven's—November 16

For a second year, a group of Victoria Centre members are assisting with a concert of William Hershel's music by providing a projection of Victoria Centre astrophotography. A RASC special project grant is supporting this event, marking the 150th anniversary of the RASC and 100 years of the DAO.

Scheduled Meetings

Astronomy Café—every Monday evening, except June-August summer break

This weekly event, open to the public is held in The Portable at the Fairfield Gonzales Community Centre. This year's hosts were John McDonald, Reg Dunkley, Barbara Lane, and Kurt Lane. The evenings generally begin with sharing of observations and astrophotography of members, and often continue with discussions on topics of (mostly astronomical) interest. Victoria Centre gains new members from hosting this weekly event.

General Meetings—on the second Wednesday of the month, except Summer & November

Our nine monthly meetings were held at the University of Victoria with excellent speakers, usually provided by the NRC program or the UVic. Attendance averages around 40, with most meetings live-streamed to be watched from home. Recordings are available on our YouTube channel.

2018 Speakers

January	Patrick Hall, York University—Quasars: black holes that you can “see”
February	Guillaume Thomas, NRC Herzberg—The mystery of dark matter
March	Vincent Hénault-Brunet, NRC Herzberg—The hunt for black holes in globular clusters
April	Henry Ngo, NRC Herzberg—Dark matter: small scales, big problems
May	Karun Thanjavur, University of Victoria—Peering through nature's telescope - gravitational lensing as a window into the distance universe
June	Joanna Woo, University of Victoria—The Mysterious Death of Dwarf Galaxies
September	Nienke van der Marel, NRC Herzberg—Planets under construction: how to study a million-year process
October	Reka Winslow, Space Science Center, University of New Hampshire—Coronal mass ejection evolution and their effects on galactic cosmic rays and planetary magnetospheres

Annual General Meeting - November 17

Our AGM and elections were held at the Cedar Hill Golf Course, with the usual good food and service, interesting guest speaker, and door prizes appreciated by all attendees.

Centre Council Meetings

Council meetings are held at UVic on the first Wednesday of alternate months. The meetings are open to all members and the primary venue to discuss council business. Two major endeavours were the sale of surplus observatory equipment and the creation of new Centre By-Laws.

Publications, and Website

SkyNews

Victoria Centre's monthly newsletter *SkyNews* is published 10 times per year; edited again by Reg Dunkley. *SkyNews* keeps the membership up-to-date on local events and upcoming activities.

Astrophotography by our club members usually graces the cover and often corresponding articles provide astrophysical explanations of the captured objects. Contributions of short articles from members appear often.

Websites, E-mail, and Social Media

Victoria Centre's online presence includes:

- Astronomical and event photos—<http://rascvic.zenfolio.com/>
- Astronomical and event videos—www.youtube.com/user/RASCVictoria
- Facebook group—www.facebook.com/groups/VictoriaRASCals/
- Twitter—<https://twitter.com/RASCVictoria>

Observing Activities and Observer Support

Active Observers Group

The Active Observers Group continues to meet regularly throughout the year at our Victoria Centre Observatory (VCO). Observing sessions are scheduled weekly and are presided over by two Members-in-Charge (MICs), weather permitting. All members on the active observers' list are welcome to attend.

Victoria Centre Observatory

Work continues to enhance the operation of the new 16" Ritchey-Chrétien telescope acquired last year. The surplus observing hardware left from the upgrade was sold to various buyers. Of note, the Meade 14-inch SCT was sold to Prince George Centre. Imaging tests gave impressive results, and members are starting to take advantage of the much-improved capabilities of the new telescope. The VCO's main telescope is a fine instrument, and members put it to good use with the lineup of planets providing many “wow” moments.

DAO Plaskett Telescope

Michel Michaud, a Plaskett Telescope operator, has obtained time each year on the telescope for Centre observers to collect images.

New Observers

Sid Sidhu welcomes new members to his personal observatory. He provides an overview of the night sky and instruction in how to begin an exploration of the sky.

University of Victoria Observatory

With assistance of Karun Thanjavur of U Vic's Department of Physics and Astronomy, Sherry Buttner, Nelson Walker, and Chris Purse host monthly Friday-evening sessions from October to April at the UVic Observatory.

Donations by members

Several of our members have donated or bequeathed telescopes, eyepieces, other optical gear, and astronomical books to Victoria Centre.

Responsible Lighting

With the leadership of Dave Robinson, our members are actively working with municipalities, cities, and the Capital Regional District to ensure street lighting and lighting of other public spaces and structures minimizes harm to the night sky, humans, and animals, and enhances safety for everyone. Information in the form of pamphlets, handouts, and display boards is made available at public events.

Legal

New By-Laws

New By-Laws for Victoria Centre were drafted this year in order to comply with new provisions of the B.C. Societies Act. An

Extraordinary Meeting of Victoria Centre was held on September 12 endorsed a resolution to amend our By-Laws. The new By-Laws were subsequently filed with B.C. Registries. At the same time, the Centre's fiscal year end will change from September 30th to December 31st; thereafter our fiscal year will be the same as the calendar year.

Joe Carr
Secretary

WINDSOR CENTRE

Windsor has consisted of a membership average between 90 and 100 people during 2018. Monthly meetings for members and visitors are held at the Ojibway Park Nature Centre in Windsor's far west side. Various talks presented at meetings this past year have included: Cosmic Coincidences (mathematical relationships, symmetry, and observed patterns); The Electromagnetic Spectrum; Life on Other Worlds; 1947 to Seventeenth Century with Excursions into Antiquity; and A Survey of Normal and Active Galaxies, to name a few. During each membership meeting, we have a Director of Observing report, which highlights events in the night sky for the following month. At our November meeting, we presented a "RASC Windsor—A Photo Retrospective," based on photo submissions and our avid photographic historian, Tom Sobocan.

People have found it easy to find out about our Centre online through our primary local website, www.rascwindsor.com, and also via Facebook. Our well-detailed newsletter can be viewed online and printed copies are given out at meetings.

The Windsor Centre manages its own observatory far outside the city within the municipality of Lakeshore. Named after one of Windsor Centre's founding members, Hallam Observatory consists of a 12-foot-high dome with a connected warm-up room, including an outer observation deck. Within the dome is our pier-mounted Celestron 14 Schmidt-Cassegrain telescope, with an Astrotech 111 (member owned) refractor mounted with a CCD camera for auto-guiding, all of which is operated via a Windsor Centre warm-room PC.

Due to the popularity of our public open-house evenings, held once each month, we've had to change our game plan. In 2017, the increasing number of visitors, and short supply of volunteers, meant we had to change our "open house" nights to a prescheduled guest night. This allowed us to limit the number of visitors to a more manageable 20 to 25 per night. We had to continue this policy in 2018 due to the continued popularity. Along with the new guest policy came a larger responsibility for the council member who arranged the scheduling, Mahayarralh Starr Livingstone. A monthly email containing the weekly visits and schedules was kept and sent to our volunteers. To date, this has been proven successful, and the safest option for both our volunteers and guests. When the Hallam Observatory isn't hosting guests, our members are able to use it, after receiving their own key to access the site following training on use of dome and equipment. This is allowed for a small annual fee, which helps pay for the electricity, heat, and maintenance.

There have been a few specially booked group visits to the observatory over the past year, such as one by nearly 30 students from a private high school, a church group, and a small group of various friends and colleagues of Windsor Centre members. These special nights have helped us financially through donations to the Centre.

Point Pelee National Park remains open for the public until midnight once a month during Dark-Sky Night events, where visitors are welcome to bring their own telescopes and equipment to utilize this southern Dark-Sky Preserve. Every two months Windsor members are always on hand with their own astronomical equipment to provide views of the splendors of the night.

We are looking forward to a safe and successful 2019!

Dan Perissinotti
Secretary

WINNIPEG CENTRE

The Winnipeg Centre membership currently stands at approximately 230-235 members - stable from last year.

The Winnipeg Centre holds monthly meetings that are open to the public. This year, ten of the meetings were held at St. John's College at the Fort Garry Campus of the University of Manitoba. The meetings are designed to accommodate a wide range of knowledge and experience in the audience. We start with a beginner's session, followed by "What's up," which is a review of upcoming astronomical events and viewing opportunities for the month, and "What's new," an update of current topics and events in the astronomical news. We also have sessions on other topics, including RASC programs and certificates, imaging, astrophotography, and computer applications. Following a coffee break we have a presentation by a keynote speaker. This year, we had presentations from the following visiting speakers:

- Dr. Craig Heinke from the University of Alberta—Globular Clusters and their weird binary stars.
- Benson Guest from the University of Manitoba—X-ray observations of pulsar wind nebulae
- Paul Gray—How to see nothing
- Alan Dyer—Aurora
- Chris Gainor (RASC President)—The history of the *Hubble Space Telescope*

Local keynote speakers included Gerry Smerchanski (The Copernican Revolution and The Scientific Revolution Part 2: Tycho Brahe), Brenden Petracek (Apollo 8), Alan Macklem (astrotourism), Gord Tulloch (iTelescopes).

The meetings are well attended, often attracting 80 or more members and guests, and are recorded as YouTube videos. The meetings are followed by pizza and beer at a local restaurant.

The May meeting was held at the Planetarium at the Manitoba Museum in celebration of the Planetarium's 50th anniversary and included Alan Dyer's presentation on Aurora. Our June meeting is a barbecue.

The Winnipeg Centre continues to support St. John's College by providing monies for a scholarship award for one student.

Our Centre maintains an observatory at University of Manitoba's Glenlea Research Station, about 15 km south of the City of Winnipeg. There we have a dome housing a 12-inch Meade LX telescope; plus we have a warm room complete with restroom facilities. A large concrete pad to the south, complete with power posts, allows for the members to setup their own equipment. This site is where we hold our "Member's Observing Night" on the Saturday following our regular meetings. Our Observatory Director, Bryan Stach, has been actively upgrading and maintaining the building.

There are some concerns with the encroachment of light pollution, leading to ongoing debate on possible future relocation. The observatory is situated adjacent to the Red River with the inherent annual concerns of flooding.

The Centre newsletter *Winnicentrics*, edited by Mike Karakas, is published 10 times per year and contains a list of upcoming events, as well as member profiles, an astrophotography gallery featuring members' astroimages, and articles on astrophotography and digital image processing, observable objects in constellations and the mythology of the constellations, this month in history, articles on RASC programs (Explore the Universe), and an urban astronomy series.

We have an active "free" loaner telescope program for club members, with two 8-inch Dobsonian telescopes and a solar PST. We generally lend them out for a period of a month (or longer if the demand is low).

Spruce Woods Star Party (SWSP):

Organized by Silvia Graca, SWSP is held at Spruce Woods Provincial Park, about 200 km west of Winnipeg, in a rural setting with very little light pollution. The park provides us with exclusive use of the winter campground at the cost of providing the park with a Public Observing night in exchange. Over the years, the Winnipeg Centre has developed a close relationship with Spruce Woods Park and has worked together with the Park in preparing to apply for a Dark-Sky Preserve designation. In 2018, the public viewing event was held on August 18th with solar viewing and presentations by Centre members on constellations, light pollution, and a demonstration on the Solar System.

SWSP September 6-9: As always SWSP is the highlight of the Winnipeg Centre year. This year (just like last year) we had rain and overcast skies for most of the weekend. Despite the weather, the attendees had a great time together. Gerry Smerchanski's binocular sky tour was once again a weekend highlight. He also presented an awesome collimation clinic. Other highlights included lectures on Star Spots by Dr. John Rice, and Meteorite Hunting and Collecting by Ralph Croning.

The last evening features a Banquet dinner in the nearby town of Glenboro, followed with a Sunday morning breakfast. The SWSP event is very important to the Winnipeg Centre, as it provides not only an observing event but socializing for the members.

The Winnipeg Centre participates in numerous regular outreach astronomy events where we provide viewing opportunities for the General Public:

- Members provide presentations followed by a telescope viewing session at Oak Hammock Marsh, a nature centre located 30 km north of the city, for their monthly Astronomy Observing Night.
- The Centre has partnered with the University of Manitoba Department of Physics and Astronomy for their "Open House" program. Held on the last Wednesday of the month during the scholastic year, it welcomes university students to come to the planetarium for a presentation followed by an observing session at the Ewen Campus Observatory, with supporting telescopes provided by RASC members.
- We participated in the 2018 International Astronomy Day festivities by setting up a daytime display inside of a local Indigo bookstore, with a few solar telescopes set up for supervised public viewing outside its doors.
- Whiteshell public outreach event (May 19). Winnipeg members hosted a public observing event.
- Spruce Woods Public Outreach: August 18
- Riding Mountain Public Outreach (with Brandon members): September long weekend

- Outreach programs for Grade-6 students at John Pritchard School January 31, and Grade-9 students at Shaftesbury High School September 19
- The Winnipeg Centre set up a booth and display in Chapters Bookstore on January 27 to celebrate the National Star Party as a public outreach event.

The Winnipeg Centre also supports the Manitoba Schools Science Festival by providing judges, plus a cash prize to the person with the best astronomically based display.

The Winnipeg Centre is actively pursuing liaisons with various Manitoba sites to establish designated Dark-Sky Preserves.

Clifford Levi
Secretary

YUKON CENTRE

In 2018, the RASC Yukon Centre enjoyed its third successful year within the RASC.

The mandate of the Yukon Centre (aka: Yukon Astronomical Society) has not changed: to popularize astronomy and related sciences, and to build and operate the first public observatory in the Yukon.

We had 28 registered members in October 2018, at the end of our previous fiscal year. We have experienced significant growth since, thanks to growing interest during our 3rd Annual Star Party and our non-credit college courses.

We currently have 35 registered members (March 2019).

Main Events and Activities

Bi-weekly workshops at the Yukon College and Sporadic Observation sessions (approximately 200 participants in 2018)

- October 2017 Star Party (week-long event in, approximately 100 participants)
- October 2017 Public outreach and panel discussion events with our guest, Phil Plait (aka Bad Astronomer) in Beringia Centre and Old Fire hall (85 participants)
- November 2017 First ever Aurora 360 flight in cooperation with Anthony Gucciardo and Air North (120 participants at reception, 75 on-flight)
- January Light Pollution Course at the Yukon College by Forest Pearson (6 participants)
- April Universe from Your Backyard Course by Chris Lomas (5 registered students)
- June Commencing of Observatory Construction
- July Yukonconstruct Kids Summer Camp (Solar observation, presentation, Rocket Launching, 30 children)
- August 2nd Yukon Star Party and inauguration of our new Yukon Observatory (approximately 100 participants during the 2-day event)
- September Commencing the Construction of Yukon Astronomy Education and Interpretive Centre.
- September Northern Nights Festival in partnership with Parks Canada (approximately 200 participants) at Kathleen Lake



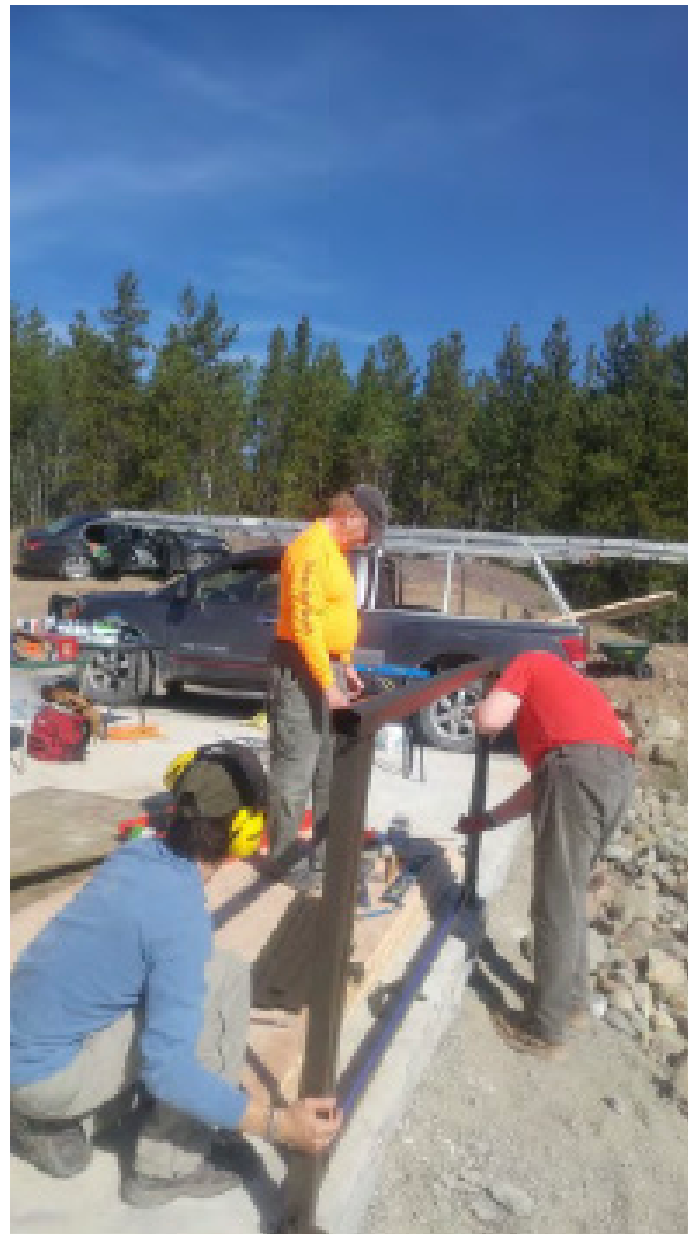
Frame of the new observatory wall

During the year, representatives of the Yukon Centre appeared in media several times: radio interviews and newspaper articles, including CBC North, Radio Canada BC, Radio Canada Nunavut, *Yukon News*, Front Page photo and article in *WhatsUp Yukon*.

Mitigating Light Pollution in Whitehorse and in the Yukon by leadership of Forest Pearson Supporting Parks Canada to designate Kluane National Park to be a Dark-Sky Preserve. We also have close to 500 followers on Facebook.



YAS volunteers contributing to construction



This was the status in August 2018, on the day of inaugurating the observatory



Left: With construction of our Education Centre in progress (September/October 2018) (Courtesy: Chrisv Gainor)

Below: AND...as of completion in February 2019



Yukon Star Party

The 2nd year YAS is organizing a star party



Cutting ribbon with Charles Ennis (RASC 2nd V- P) Paolo Gallina (MLA) and Garry Umbrich (Takhini Hot Springs Ltd.) during the Star Party



Google VR-ing with Parks Canada staff at the Star Party



A young participant painting planets with Thomas Jacquin



Lecture presented by Dr. Christa Van Laerhoven during the Star Party



Sun-gazing with David Millar's Tele Vue wonder

Kluane Northern Nights Festival—September 2018

The 3rd consecutive year of participating as organizing partner. We created a “tradition” together with Parks Canada having this event yearly at Kathleen Lake. We experienced a huge increase of popularity with many people participating!



Solar viewing reachout at Haines Junction's Visitor Centre



BBQ before rocket launch. Art tent during the Kluane Northern Nights Festival 2018

To summarize numbers, we personally reached out and met with more than 700 people during our events and workshops, and we successfully reached out to thousands of people via the various kinds of media.

Takhini Hot Springs Observatory Project

Since 2016, we worked tirelessly to secure funding for the observatory construction at Takhini Hot Springs. In 2018, the CDF of Government of Yukon awarded funding for the construction of the observatory and education facility, in two separately funded projects. The construction of the Yukon Observatory started in June 2018 and completed by August/September 2018. We received the occupancy permit in August 2018 and were able to facilitate our second Star Party. A separate funding for our Astronomy Education Centre was approved in July 2018, and the construction completed in February 2019.

Kluane Northern Nights Festival – September 2018

The 3rd consecutive year of participating as organizing partner. We created a “tradition” together with Parks Canada having this event yearly at Kathleen Lake. We experienced a huge increase of popularity with many people participating!

Yukon College Non-Credit Courses

Three Non-Credit courses occurred in 2018 and planned to be continued

- Light Pollution Course—Forest Pearson



Chris Gainor, RASC President supported us by coming to the Yukon and presenting about Hubble Space Telescope at Kluane



Night-sky presentation with Vikki Zsohar and the observatory's 11-inch Schmidt-Cassegrain telescope

- Universe from your Backyard—Chris Lomas and Vikki Zsohar

Other projects pending

- Another proposed Public Observatory at Grey Mountain is included in Whitehorse's Chadburn Lake Park Management Plan
- All-Sky Camera Project—There is great interest from all over the world.
- Department of Education—YAS was approved to submit educational projects/curriculum for K-12 students
- Observatory event on 2019 February 10 for 2nd Aurora 260 flight

Thank you

- Anthony Gucciardo for your hard work and dedication for pioneering the first-ever North American Aurora Flight!
- Forest Pearson for your hard work about Mitigating Light Pollution in Whitehorse and Assisting Parks Canada to designate Kluane National Park as an RASC Dark-Sky Reserve

Congratulations

- Forest Pearson for achieving the Explore the Universe Certification in 2018!

Vikki Zsohar

President

CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2018

		Belleville	Calgary	Edmonton	Halifax	Hamilton	Kingston	Kitchener-Waterloo	London	Mississauga
REVENUE										
Membership	Membership Fees: Centre Fee	817	10,046	6,798	2,702	3,438	1,264	3,055	3,110	3,476
	Membership Fees: Affiliate						23			
	Membership Fees: other									
	Centre Newsletter				255					
Donations / Fundraising	Donations		3,059	3,039	25		1,775			319
	Fundraising		21,051	45,939						445
Sales Revenue	Sale of Observer's Handbooks									
	Sale of Observer's Calendars	112	870	1,410	720	120	640	520	474	585
	Other Publication Sales									942
	RASC promotional items	20			340			50		
	Other Sales						231	497		
Subscription Revenue	Astronomy / Sky & Telescope									
	Other									
Events Revenue	Star Parties	819	617	1,605	5,779					
	Annual Dinner		2,836					1,560	1,084	
	Astronomy Day									
	Meetings									
	Other Events	30		1,000		2,215				113
General Assembly Revenue	General Assembly		(145)							
Miscellaneous Revenue	Interest and Dividends	1		48	171		91	39		
	Advertising									
	Observatory Site		180							
	Equipment Rentals/Loans		2,722							
	Public Services, events, outreach		1,760	72,649						
	Miscellaneous		2,272	590	300	583		628	3,574	
TOTAL REVENUE		1,799	45,267	60,429	10,292	6,356	4,024	6,350	8,242	5,880
EXPENDITURES										
Sales Expenses	RASC Publications	361	797	1,506	1,080	1,182	355	762		405
	Other Publications									
	Newsletter				406		38		348	
	RASC promo items	19	899	683		169				253
	Other									
Event Expenses	Star Parties	554	1,707	3,098	4,500			120		
	Annual Dinner	300	2,927	577				2,027		594
	Astronomy Day									
	BIYA									
	Meetings		555	905	169	856	634	333	20	
	Other Events		353	5,488	1,840	310	772	452	184	750
Travel	General Assembly and Council Meetings	805							2,029	
Administrative Expenses	Office Administration	14		982	551	294	31	435		265
	Equipment and Supplies		985		498		13		68	
	Insurance		2,700	1,405	1,297	1,668	486	486		486
	General Expenses and Audit	8	1,494				60			
	Awards	389	1,104	1,505		91		84		163
	Donations			3,234	66				500	
	Advertising									1,181
Miscellaneous Expenses	Observatory and Site Expenses	163	8,526	72,587	247	3,113	147	177	665	
	Equipment & Supplies/Library			2,002		142				
	Depreciation		1,923		521					1,096
	Miscellaneous		4,010	3,608		352	326	1,020	2,987	483
TOTAL EXPENDITURES		2,613	27,980	97,578	11,175	8,177	2,862	5,896	6,799	5,676
SURPLUS OR DEFICIT ON OPERATIONS		(814)	17,287	(37,149)	(883)	(1,821)	1,162	454	1,443	204
ASSETS	Current assets	5,445	91,746	81,800	19,561	25,995	30,231	16,150	16,110	18,656
	Capital assets	783		222,500	11,083	104,178			35,758	
	Total assets	6,228	91,746	304,300	30,644	130,173	30,231	16,150	51,868	18,656
LIABILITIES	Current liabilities		61,946		1,240					422
	Long-term liabilities			24,000						
EQUITY	Net Equity	6,228	29,800	280,300	29,404	130,173	30,231	16,150	51,868	18,234
TOTAL LIABILITIES AND EQUITY		6,228	91,746	304,300	30,644	130,173	30,231	16,150	51,868	18,656

CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2018

		C. F. de Montréal	New Brunswick	Niagara	Okanagan	Ottawa	Prince George	Regina	St. John's	Sarnia
REVENUE										
Membership	Membership Fees: Centre Fee	3,765	1,887	2,010	2,634	6,764	1,497	743	1,719	222
	Membership Fees: Affiliate									
	Membership Fees: other				565			570		
	Centre Newsletter									
Donations / Fundraising	Donations	486		796	6,873	1,185	1,531	60	525	
	Fundraising			183	9,996		12,000	1,285		
Sales Revenue	Sale of Observer's Handbooks									
	Sale of Observer's Calendars	220	730	96	1,080	1,703	900	935	675	150
	Other Publication Sales			15						
	RASC promotional items			88	279					
	Other Sales			654	183		61	4,114		
Subscription Revenue	Astronomy / Sky & Telescope									
	Other									
Events Revenue	Star Parties							867		
	Annual Dinner				8,048	3,375				
	Astronomy Day									
	Other Events							650		
General Assembly Revenue	General Assembly									
Miscellaneous Revenue	Interest and Dividends	801		1	20	123			183	
	Advertising									
	Observatory Site			90						
	Equipment Rentals/Loans				50				55	
	Public services, events, outreach						2,702			
	Miscellaneous			247	1,642			9,224		
TOTAL REVENUE		5,272	2,617	4,180	31,370	13,150	18,690	9,224	3,157	372
EXPENDITURES										
Sales Expenses	RASC Publications	208		121	596	2,821	960	752	948	150
	Other Publications		848			1,007				28
	Newsletter				371					
	RASC promo items			37	105					
	Other			537	214	14	205	2,436		
Event Expenses	Star Parties	638	501	55				24	107	
	Annual Dinner	1,565	113		2,325	3,913		213		
	Astronomy Day									
	BIYA									
	Meetings		107	866	147			1,204	153	
	Other Events			180	1,914	1,221	8097	1,067		
Travel	General Assembly and Council Meetings		516		180					
Administrative Expenses	Office Administration		29		49	657	40	254	281	
	Equipment and Supplies		92	79	537		4	43		
	Insurance	894	218		486	2,320	2954		486	
	General Expenses and Audit	673	21	107		131		583		
	Awards			50	23	570				
	Donations		30	48		500				
	Advertising			20			45			
Miscellaneous Expenses	Observatory and Site Expenses	4,892	126	607	16,625	3,549	6081	652		
	Equipment & Supplies/Library		19			153				
	Depreciation		339	796		2,460				
	Miscellaneous	715		850	2,661	5,386	234	573		
TOTAL EXPENDITURES		9,585	2,959	4,353	26,233	24,702	18619	7,801	1,975	178
SURPLUS OR DEFICIT ON OPERATIONS		(4,799)	(342)	(173)	5,137	(11,552)	71	1,423	1,182	194
ASSETS	Current assets	78,213		10,723	36,812	58,966	12,7589	18,177	4,919	2,600
	Capital assets	18,824		14,869	256,114	20,036		72,725	23,331	
	Total assets	97,037		25,592	292,926	79,002	12,7589	90,902	28,250	2,600
LIABILITIES	Current liabilities					2,566	(872)			
	Long-term liabilities									
EQUITY	Net Equity	97,037		25,592	292,926	76,436	12,8461	90,902	28,250	2,600
TOTAL LIABILITIES AND EQUITY		97,037		25,592	292,926	79,002	127,589	90,902	28,250	2,600

CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2018

		Saskatoon	Sunshine Coast	Thunder Bay	Toronto	Vancouver	Victoria	Windsor	Winnipeg	Yukon	Yukon
REVENUE											
Membership	Membership Fees: Centre Fee	2,544	1,497	966	17,795	5,447	5,291	2,785	4,325	1,100	2,396
	Membership Fees: Affiliate										3,476
	Membership Fees: other										
	Centre Newsletter										
Donations / Fundraising	Donations	167	2,637	50	20,218	169	721	1,096		1,335	75
	Fundraising	414	9,700		5,694		200	442		84,187	
Sales Revenue	Sale of Observer's Handbooks										
	Sale of Observer's Calendars		120	410	1,040	1,442	766	460	496		
	Other Publication Sales					29		1,920			
	RASC promotional items					28					
	Other Sales	200	215			1,412	8,327				
Subscription Revenue	Astronomy / Sky & Telescope										
	Other										
Events Revenue	Star Parties	14,999					569			2,337	
	Annual Dinner						1,720				
	Astronomy Day										
	Other Events		240								
General Assembly Revenue	General Assembly										
Miscellaneous Revenue	Interest and Dividends	115		6		5,491	10		27		
	Advertising										
	Observatory Site				12,850			944			
	Equipment Rentals/Loans										
	Public Services, events, outreach				8,837			125		500	
	Miscellaneous				1,967		460				
TOTAL REVENUE		18,439	14,410	1,432	68,401	14,019	18,064	7,772	4,848	89,458	5,947
EXPENDITURES											
Sales Expenses	RASC Publications		186	578		2,782	840	478	1,439		
	Other Publications						199	768			
	Newsletter				1,054	1,101	100				
	RASC promo items		126		3,185	364	216		881		
	Other						361				
Event Expenses	Star Parties	14,287					1,999			12,746	
	Annual Dinner						2,035				
	Astronomy Day					680	316				
	BIYA										150
	Meetings		703			43	905	1,289	1,150	371	
	Other Events	589	80	199		1,313	1,906				575
Travel	General Assembly and Council Meetings					256		117	543	533	275
Administrative Expenses	Office Administration	582	88	29	6,000	280			161	46	1,300
	Equipment and Supplies		120		27,882	67		268		114	273
	Insurance	1,424	582		4,950	486	510	2,088	670	683	300
	General Expenses and Audit			232	5,950	473			44		875
	Awards		41		200	500			50		
	Donations		29								
	Advertising							564		236	
Miscellaneous Expenses	Observatory and Site Expenses	857	10,206		14,745	667	4,436	1,594	333	34,564	
	Equipment & Supplies/Library				100						4,088
	Depreciation	1,403	3,750			829					200
	Miscellaneous	379				2,589			408	75	
TOTAL EXPENDITURES		19,521	15,910	1,038	64,036	12,430	13,823	7,168	5,679	49,369	5,653
SURPLUS OR DEFICIT ON OPERATIONS		(1,082)	(1,500)	394	4,365	1,589	4,241	603	(831)	40,090	15,390
ASSETS	Current assets	2,276	6,658		147,532	362,803	13,973	7,945	18,748	50,367	-9,443
	Capital assets	48,484	53,397		328,111	14,330	43,820	80,000	25,000	13,642	1,071
	Total assets	50,760	60,054		475,643	377,132	57,793	87,945	43,748	64,009	17,800
LIABILITIES	Current liabilities				103,855					5,076	18,871
	Long-term liabilities									69,424	
Equity	Net Equity	50,760	60,054		371,788	377,133	57,793	87,945	43,748	(10,490)	
TOTAL LIABILITIES AND EQUITY		50,760	60,054		475,643	377,133	57,793	87,945	43,748	64,009	18,871
TOTAL LIABILITIES AND EQUITY				46,036	11,084		375,954	54,402	84,536		18,871

DONATIONS 2018

Fundraising Committee Report

The formation of an RASC Fundraising Committee led to the engagement of Fundraising Consultant Lisa Di Veto in the fall of 2017. We're delighted to report on initiatives following that appointment and that there was a significant increase in revenue over last year's donations of \$21,420. In fact, just over \$200,000 was generated in 2018!

\$ 75,000	Trottier Family Foundation
\$ 60,000	Donations from Individuals and Members
\$ 25,000	Member Major Gift
\$ 25,000	Robert Fidler Bequest
\$ 8,650	Sponsorship Fees
\$ 6,720	Canada Summer Jobs Wages
\$ 5,000	Foundation Grants

Thank you to everyone for your generous support! Many members helped celebrate RASCs 150th anniversary with a donation—often giving for the first time. Others supported the Robotic Telescope Project, a program in development to access images and data from equipment housed in a nearly always clear skies Californian observatory. Support was also designated to the Ruth Northcott Education Fund, which allocates grants to Centres for various activities, and the Legacy Fund (prior name Peter Millman Endowment Fund). Individuals were encouraged to enrol in

monthly donations, make gifts of stocks, or arrange legacy gifts, such as naming RASC as beneficiary in an insurance policy or bequest. Donors now receive timely recognition for their gifts and Board members place personal thank-you calls in gratitude, as able.

Financial support is key to the Society's ability to develop and deliver important charitable programming and services. The Trottier Family Foundation gift for example, allowed RASC to appoint its first Youth Outreach Coordinator to provide resources and activities engaging more young people in astronomy.

The Fundraising Committee is taking a leadership role in sharing revenue options with Centres with a goal to help increase income. Please don't hesitate to contact us if we may assist your Centre with fundraising efforts or if you have a successful event or product that might be adopted by other locations. We also look forward to hearing from individuals, members, and businesses who would like to arrange their gift to help RASC continue its vital charitable mandate to advance astronomy.

Once again, thank you to everyone for your valued support!

Sincerely,

Charles Ennis

Fundraising Committee Chair

DONATIONS 2018

RASC Donations

\$100–\$249.99

Anonymous
Denise Ballentine
Douglas Bates
Thomas Bonner
William Bradley
Thorkell Brandson
James Bulmer
Anantha Busanelli
Perry Cash
David Chisholm
Don Clark
Ken Clowes
Joseph De Koninck
Gay Docherty
James Drinnan
Dale Ellis
Thomas English
Joyce Feinberg
Gary Finley
Donald Funston
Christopher Gainor
Randolf Girardin
Amy Gordon
Anthony Gucciardo
Janet Halliday
William Harrison
Searle Hartman
Lloyd Higgs
Jenna Hinds
Allan Hogenson
David Hogg
Gary Irwin
Rockney Jacobsen
Norman Jeffery
David Jenkins
Pat Kelly
Fintan Kennedy
Lynne Koppeser
Dave Lindo
Norah Link
Rick London
Donald Macdonald
Frederick Marlett
R. Allan Moore
Pranab Mukherjee
Julia Neeser
Asbjorn Olsen
Evans Paschal
Jack Pennings
Patrick Power
Louis Rifkin
John Ross
Charles Schaeffer
Peter Schreibermaier
Bruce Seifred
Donald Smith
Michael Suchocki

Dave Tindall
Carl Tubbs
David Turner
Marc Vermette

\$250–\$499.99

D. Randy Boddam
Gabriel Guillen
Janet Janke
Renata Koziol
Frank Walcher

\$500–\$999.99

Randy Attwood
Robyn Foret
Douglas Hube
Robert Thacker
Jackman Foundation

\$1000 and over

Jay Anderson
Anonymous
Anonymous
Lisa Di Veto
Colin Haig
Trottier Family Foundation
Robert Fidler Bequest

Ruth Northcott Education Fund

\$100–\$249.99

Bruce Aikenhead
Gary Bunclark
Perry Cash
David Chapman
James Edgar
Victor Gaizauskas
Don Howden
Logan Kameda
Shawn Lee
Asbjorn Olsen
Lauri Roche
Margaret Scorthorne-Brons
David Tremaine
Carl Tubbs
Robert Victor

\$250–\$499.99

Christina Barker
Verna McNichol

\$500–\$999.99

Randy Attwood
Len Chester
John Percy

\$1000 and over

Gordon Williams

Legacy Fund

\$100–\$249.99

Perry Cash
Searle Hartman
Shawn Lee

Robotic Telescope

\$100–\$249.99

Scott Alexander
Patrick Ashmore
Denise Ballentine
Thorkell Brandson
Robert Brereton
Eric Briggs
Don Campbell
Steve Capling
Frank Cervenko
Timothy Crozier
Erwin Diener
Jim Edgar
Peter Edwards
David Eyraud
Steven Fahey
William Gamec
Peter Gorgopa
Frank Graham
Ulrich Haasdyk
Charles Hannan
Douglas Hardy
Searle Hartman
Lloyd Higgs
Brent Hineman
David Illig
Gregory Inglis
Norman Jeffery
Michelle Johns
Shawn Lee
Darwin Little
Andrew Love
Donald Macdonald
Jacek Malinowski
Patrick McKay
Alan McKeown
R. Allan Moore
Anson Moorhouse
Henry Neil
Maia Nenkova
James Olsen
George Pasut
Ebrahim Patel

Razvan Peteanu
Kirk Potter
D. G. Potter
Hugh Ramsay
Betty Robinson
Douglas Schmidt
Peter Schreibermaier
Margaret Scorthorne-Brons
Mike Stephens
Tom Stevens
Roger Taguchi
Grant Tomchuk

\$250–\$499.99

Peter Ashenhurst
Harold Belore
David Bourgeois
Donald Bradt
Eric Briggs
Gay Docherty
James Drinnan
William Gamec
Frank Graham
Nikola Halar
Calvin Lambie
Damien Lemay
Donald Macdonald
Alan McKeown
Henry Neil
James Olsen
Gil Raineault
Brian Sutherland
Thomas Swaddle
Peter Tumilty
Cornerstone Insurance Brokers

\$500–\$999.99

Richard Armstrong
Raymond Auclair
Brian Banks
Robert Brooks
Christine Clement
Martin Gormanson
Frederick Harlow
Gary Irwin
Asbjorn Olsen
Charles Schaeffer
Tinkham LLP

\$1,000 and over

Stephen Bedingfield
James Edgar
Steven Morris
J.P. White
S.M. Blair Foundation

Thank you for your support.
Gifts of \$100 plus are recognized.

2019 AWARD WINNERS

Ken Chilton Prize	not awarded	Blake Nancarrow, Toronto Scott Masterton, Toronto
Service Award	Joanne Burns, Belleville Robyn Foret, Calgary Roger Nelson, Calgary Luca Vanzella, Edmonton Ed Mizzi, Hamilton Rick Saunders, London Mike Hanes, London Leslie Strike, Mississauga Vance Petriew, Regina Danny Sklazeski, Sunshine Coast Bruce Fryer, Sunshine Coast Michael Bradley, Sunshine Coast David Thompson, Sunshine Coast Phil Chow, Toronto	Randy Groundwater, Windsor Linda Pulliah, Unattached Lauri Roche, Victoria
	Fellowship Award	not awarded
	Chant Medal	not awarded
	The Plaskett Medal	not awarded
	Simon Newcomb Award	not awarded
	Qilak Award	Chris Curwin, New Brunswick

2018 CERTIFICATES

DEEP-SKY CHALLENGE

Ted Wang (Unattached—Taiwan)

EXPLORE THE MOON—BINOCULAR

Shane Grassing, Unattached (Pilot Butte, Saskatchewan)
Edward Essex, Thunder Bay
Jeff Hiscock, St. John's

Victoria Kayser-Derenne, Unattached (Toronto, Ontario)
Robert McLean, Thunder Bay

EXPLORE THE MOON

Rod DeVries, Calgary

Charles Ennis, Sunshine Coast

Peter J. Holden, Sunshine Coast

EXPLORE THE UNIVERSE

Judy Black, Halifax
Murray Campbell, Ottawa
Christopher Cottle, Calgary
Samuel Crane, Hamilton
Domonic Dopson, Sarnia

Massimo Dopson, Sarnia
Paul Dopson, Sarnia
Victoria Kayser-Derenne, Unattached
(Toronto, Ontario)
Forest Pearson, Yukon

Ronnie Reid, Halifax
Karol Socander, Kitchener-Waterloo
Heidi Verheul, Halifax
Charles White, Halifax

FINEST NGC

Charles Ennis, Sunshine Coast

MESSIER OBJECTS

Rod DeVries, Calgary
Shane Grassing, Unattached (Pilot Butte, Saskatchewan)
Blake Nancarrow, Toronto

PAST AWARD WINNERS

Below is a list of former winners of the Society Awards.

For names before 2000, please refer to "Looking Up—A History of the RASC" by Peter Broughton. www.rasc.ca/sites/default/files/LookingUp-300-text.pdf

For names after 2000, go to the RASC website <https://www.rasc.ca/rasc-awards>

CHANT MEDAL

The Chant Medal of the Society was established in 1940 in appreciation of the great work of the late Professor C.A. Chant in furthering the interests of astronomy in Canada. The medal is awarded not oftener than once a year to an amateur

astronomer resident in Canada on the basis of the value of the work carried out in astronomy and closely allied fields of original investigation.

- | | | | |
|------|----------------------------|------|-----------------------------|
| 2001 | Richard Huziak (Saskatoon) | 2002 | Dr. Roy Bishop (Halifax) |
| | | 2006 | Ed Majden (Victoria) |
| | | 2008 | Dr. Geoff Gaherty (Toronto) |
| | | 2018 | Peter Broughton (Toronto) |

FELLOWSHIP AWARD

Developed jointly by the Awards and Nominating Committees, and approved by the RASC Board of Directors in November 2013, the award of Fellow of the RASC (FRASC) is created to acknowledge the work of long-serving members. It recognizes those outstanding members who have made extraordinary contributions to the Society over the long term, much of which service has been rendered at the national level.

- | | | | |
|------|---|------|--|
| 2014 | Randy Attwood (Mississauga)
Dr. Roy Bishop (Halifax)
Peter Broughton (Toronto)
Dr. James Hesser (Victoria) | 2016 | Jay Anderson (Winnipeg)
Alan Batten (Victoria)
Doug Hube (Edmonton)
Franklin Loehde (Edmonton)
Patrick Kelly (Halifax) |
| 2015 | Robert Dick (Ottawa)
Dave Lane (Halifax)
Dr. John Percy (Toronto)
Mary Lou Whitehorne (Halifax) | 2017 | none awarded |
| | | 2018 | Peter Jedicke (London) |

KEN CHILTON PRIZE

The Chilton Prize was established in 1977 by the National Council of the Society in remembrance of Ken E. Chilton, an active member of the Hamilton Centre. The prize is awarded annually to an amateur astronomer resident in Canada in recognition of a significant piece of astronomical work carried out or published recently.

- | | | | | | |
|------|--|------|--|------|---|
| 2008 | Eric Briggs (Toronto)
Debra Ceravolo (Ottawa)
Peter Ceravolo (Ottawa)
Lou Cox (Ottawa)
Steve Gauthier (London) | | Doug George (Ottawa)
Paul Gray (New Brunswick)
Walter MacDonald (Kingston)
Jack Newton (Victoria)
Ajai Sehgal (Ottawa)
Jennifer Tigner (Victoria)
Dave Toth (London) | | Kim Hay (Kingston)
Marc Keelan-Bishop (Belleville)
Don Kelly (New Brunswick)
Rémi Lacasse (Unattached)
Dave Lane (Halifax)
Damien Lemay (Québec)
Ron Macnaughton (Toronto)
Chris Weadick (New Brunswick)
Jennifer West (Winnipeg) |
| | | 2009 | Brian Battersby (Prince George) | | |
| | | 2010 | Brian Battersby (Prince George)
Lise Charlebois (Unattached)
Ted Dunphy (New Brunswick)
Paul Gray (New Brunswick) | | |
| | | | | 2012 | Holly Ayles (New Brunswick) |
| | | | | 2014 | Kathryn Gray (Halifax)
Nathan Gray (Halifax) |

PLASKETT MEDAL

The Royal Astronomical Society of Canada and the Canadian Astronomical Society together present an award in recognition of the pivotal role played by John Stanley Plaskett in the establishment of astrophysical research in Canada. The award is made to the graduate from a Canadian university who is judged to have submitted the most outstanding doctoral thesis in astronomy and astrophysics in the preceding two calendar years. An award need not be made every year.

- | | | | |
|------|---|------|---|
| 2006 | Dr. Lauren A. MacArthur (British Columbia) | 2013 | Dr. Yasuhiro Hasegawa (McMaster University) |
| 2007 | Dr. Frédéric Grandmont (Université Laval) | 2014 | Dr. Andrew Pon (University of Victoria) |
| 2008 | Dr. Adam Muzzin (University of Toronto) | 2015 | Dr. Anne Archibald (McGill University) |
| 2009 | Dr. Catherine Lovekin (Saint Mary's University) | 2016 | Dr. Jonathan Gagné (Université de Montréal) |
| 2010 | Dr. Helen Kirk (University of Victoria) | 2017 | Dr. Fereshteh Rajabin (Western University) |
| 2011 | Dr. Kaitlin Kratter (University of Toronto) | 2018 | Dr. Gwendolyn Eadie (Queen's University) |
| 2012 | Dr. Pier-Emmanuel Tremblay (Université de Montréal) | | |

PRESIDENT'S AWARD

Established in 2008, this award is to be given at the President's discretion, usually once a year, to a member who has made an important contribution to the Society, and to be presented by the President either at the General Assembly or during a visit by the President to the home Centre of the recipient.

2010	Sid Sidhu (Victoria);	2016	Terence Dickenson (Toronto)
2011	Mayer Tchelebon (Toronto)	2017	Dave Garner (Kitchener-Waterloo)
2012	Randall Rosenfeld (Unattached)	2018	Rick Huziak (Saskatoon)
2013	Dave Lane (Halifax)		
2014	Robert Dick (Ottawa)		
2015	Walter MacDonald (Kingston)		

QILAK AWARD/LE PRIX QILAK

This award is jointly administered by CASCA, the FAAQ, and the RASC, instituted to acknowledge excellence in astronomy outreach and communication. One prize can be awarded annually in each of the three founding societies

2012	Colleen O'Hare (Okanagan)	2016	Doug Cunningham (Toronto)
2013	Robert Duff (London)	2017	Paul Heath (Halifax)
2014	Dr. Howard Trottier (Vancouver)	2018	Dr. Rob Thacker (Halifax) RASC
2015	Toronto Centre DDO Volunteers (Toronto)		Mike Moghadam (Ottawa)
			Daniel Brousseau (Sherbrooke)

SERVICE AWARD

The Service Award was established in 1959 and takes the form of a bronze medal presented to members who have performed outstanding service to a Centre or to the National Society. Below is a list of recent winners of the Service Award.

2006	Ted Bronson (Thunder Bay)	2010	Guy Mackie (Okanagan)		Chris Malicki (Mississauga)
	Mark Kaye (Hamilton)		Bryan Kelso (Okanagan)	2016	Andy Blanchard (Hamilton)
	Kevin Kell (Kingston)		Jim Tisdale (Okanagan)		Gary Bennett (Hamilton)
2007	Dr. Rajiv Gupta (Vancouver)		Barry Matthews (Ottawa)		Paul Gray (Halifax)
	Bruce McCurdy (Edmonton)		Curt Nason (New Brunswick)		Hugh Pett (Okanagan)
2008	Dennis Grey (Toronto)	2011	Robert Dick (Ottawa)		Chris Teron (Ottawa)
	Leslie Harvey (Toronto)	2012	Roland Dechesne (Calgary)	2017	Eric Briggs (Toronto)
	Tony Horvatin (Toronto)		James Edgar (Regina)		Simon Hanmer (Ottawa)
2009	Clint Shannon (Halifax)		Fred Smith (St. John's)		Katrina Ince-Lum (Toronto)
	Robert Duff (London)	2013	Larry McNish (Calgary)		Michael Moghadam (Ottawa)
	Kim Hay (Kingston)		Dietmar Kupke (Toronto)		Charles O'Dale (Ottawa)
	Richard Huziak (Saskatoon)		Brian McCullough (Ottawa)		Dr. Brian Pihack (Niagara)
	Walter MacDonald (Kingston)	2014	Jay Anderson (Winnipeg)		Betty Robinson (Mississauga)
	Al Seaman (Ottawa)		Dave Gamble (Okanagan)		Randall Rosenfeld (Unattached)
	Patrice Scattolin (C.F. de Montréal)		Susan Gagnon (Kingston)		Stan Sammy (Niagara)
	Alan Whitman (Okanagan)		Dr. James Hesser (Victoria)		Gerry Smerchanski (Winnipeg)
			Greg Lisk (Belleville)		Don Town (Belleville)
		2015	Chris Stevenson (St. John's)	2018	Colleen O'Hare (Okanagan)
			Mary Lou Whitehorne (Halifax)		Grant Rice (Okanagan)
			David M.F. Chapman (Halifax)		Brian Lucas (Sunshine Coast)
			Colin Haig (Hamilton)		Neil Sandy (Sunshine Coast)

SIMON NEWCOMB AWARD

This award was instituted in 1978 to recognize literary ability among non-professional members of the Society.

1994	Michael S.F. Watson (Unattached, Canada)	2002	Dr. David Levy (Kingston)	2012	Randall Rosenfeld (Unattached, Canada)
1999	Terence Dickinson (Toronto)	2003	Alister Ling (Edmonton)	2013	Alan Whitman (Okanagan)
2001	Dan Falk (Toronto)	2004	Mary Lou Whitehorne (Halifax)	2016	Martin Hellmich & Halley Davies (Halifax)
		2006	Dr. Warren Finlay (Edmonton)	2017	Ivan Semeniuk (Toronto)
		2007	Alan Dyer (Unattached, Canada)	2018	Nicole Mortillaro (Toronto)
		2008	Gary Seronik (Victoria)		
		2009	James Edgar (Regina)		
		2011	Jay Anderson (Winnipeg)		

HONORARY MEMBERS OF THE RASC

Dr. Oscar Álvarez-Pomares (Cuba)	Prof. Andrew Fraknoi (United States)	Dr. Lisa Randall (United States)
Dr. William Bottke (United States)	Dr. Owen Gingerich (United States)	Dr. Sara Seager (Canada)
Dr. David L. Crawford (United States)	Dr. Jean Meeus (Belgium)	Dr. William Sheehan (United States)
Rev. Robert Evans (Australia)	Dr. Jay Pasachoff (United States)	Dr. Carolyn Shoemaker (United States)
Dra. Julieta Fierro (Mexico)	Dr. P.J.E. (Jim) Peebles (United States)	Dr. R. Brent Tully (United States)

PAST APPOINTED AND ELECTED OFFICERS OF THE RASC

Below are lists of former Honorary Presidents, Presidents, Secretaries, and Treasurers of the RASC. For names before 1990, please refer to "Looking Up—A History of the RASC" by Peter Broughton.

Honorary Presidents

1997-2001	Jack Locke
2001-2005	Roy Bishop
2005-2010	Robert Garrison
2010-2013	Dr. James Hesser
2013-2018	Dr. John Percy
2018-2022	Dr. Douglas Hube

Presidents

1998-2000	Randy Attwood
2000-2002	Dr. Robert Garrison
2002-2004	Dr. Rajiv Gupta
2004-2006	Peter Jedicke
2006-2008	Scott Young
2008-2010	Dave Lane
2010-2012	Mary Lou Whitehorne
2012-2014	Glenn Hawley
2014-2016	James Edgar
2016-2017	Craig Levine
2017-2018	Colin Haig

Secretaries

1999-2005	Kim Hay
2005-2007	Stan Runge
2007-2014	James Edgar
2014-2016	Dr. Karen Finstad
2016-2018	Charles Ennis

Treasurers

1998-2004	Michael Watson
2004-2006	David Clark
2006-2007	Alan Whitman
2007-2012	Mayer Tchelebon
2012-2016	Denis Grey
2016-2016	Susan Yeo
2016-2017	Colin Haig
2017-2018	Anthony Gucciardo

GENERAL ASSEMBLIES—2001 TO 2018

The following Centres hosted the General Assembly from 2001 to 2019:

2001	London
2002	Montréal
2003	Vancouver
2004	St. John's
2005	Okanagan
2006	Ottawa
2007	Calgary
2008	Toronto, Mississauga and Hamilton
2009	Saskatoon

2010	New Brunswick
2011	Winnipeg
2012	Edmonton
2013	Thunder Bay
2014	Victoria
2015	Halifax
2016	London
2017	Ottawa
2018	Calgary
2019	Toronto - joint with AAVSO

The following Centres will host the General Assembly in the future:

2020

OFFICERS AND COUNCILS OF THE CENTRES—2019

BELLEVILLE CENTRE

c/o Greg Lisk
11 Robert Drive
Trenton ON K8V 6P2
www.rascbelleville.ca
greg-lisk@sympatico.ca

President: Greg Lisk
Treasurer: Garth Penn
Secretary: Joanne Burns
National Representative: Don Town

CALGARY CENTRE

PO Box 20282
250, 300 5th Ave SW
Calgary AB T2P 4J3
roger@thebluegrid.com

Honorary President: Jennifer Howse
Past President: Jason Nishiyama
President: Steve Donaldson
Secretary: Roger Nelson
Treasurer: Greg Bridger
National Representatives: Heather Laird
Roger Nelson
Glenn Hawley

EDMONTON CENTRE

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