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

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ANNUAL REPORT  
RAPPORT ANNUEL

2017

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# ROYAL ASTRONOMICAL SOCIETY OF CANADA—2018

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<b>Belleville:</b>	Don Town	<b>Québec:</b>	Pierre Desrosiers
<b>Calgary:</b>	Arun Rau	<b>Regina:</b>	Peter Hagar
	Glenn Hawley	<b>St. John's:</b>	Marcellus Redmond
<b>Edmonton:</b>	Alister Ling	<b>Sarnia:</b>	Alan Kenyon
<b>Halifax:</b>	Patrick Kelly	<b>Saskatoon:</b>	Rob Sheppard
<b>Hamilton:</b>	David Surette	<b>Sunshine Coast:</b>	Mike Bradley
<b>Kingston:</b>	Rhett Mackend	<b>Thunder Bay:</b>	Mitchell Bagden
<b>Kitchener-Waterloo:</b>	Dave Kinjal	<b>Toronto:</b>	Laila Zichmanis
<b>London:</b>	Mike Roffey		Eric Briggs
<b>Mississauga:</b>	Leslie Strike	<b>Vancouver:</b>	Kenneth Lui
<b>C. F. de Montréal:</b>	Patrice Scattolin	<b>Victoria:</b>	Lauri Roche
<b>Montréal:</b>	Frank Tomaras	<b>Windsor:</b>	Michael Mastronardi
<b>New Brunswick:</b>	Adrien Bordage	<b>Winnipeg:</b>	Dennis Lyons
<b>Niagara:</b>	Janice Low	<b>Yukon:</b>	Christa van Laerhoven,
<b>Okanagan:</b>	Richard Christie		Vikki Szohar
<b>Ottawa:</b>	Brian McCullough	<b>Unattached:</b>	Randall Rosenfeld
<b>Prince George:</b>	Brian Battersby		

# PRESIDENT'S MESSAGE

Founded in 1868, The Royal Astronomical Society of Canada (RASC) is celebrating its 150th anniversary in 2018. Our mission is to enhance the understanding of and to inspire curiosity about the Universe through public outreach, education, and support for astronomical research.

We are achieving our mission by sharing knowledge and experience with Canadians in a collaborative way; by encouraging discovery through the scientific method; and by engaging a more diverse community that is representative of Canada's population.

We work to spark curiosity in young people, so they pursue a career in Science, Technology, Engineering, and Mathematics (STEM). We do this through support of local initiatives including courses such as the New Observers to Visual Astronomy (NOVA), by connecting with educators and science teacher organizations in several provinces, by supporting the Canada-Wide Science Fair, and through our media and outreach efforts.

As Canada's largest organization of amateur and professional astronomers, we have a country-wide network of over 5100 members in 28 Centres from St. John's, Newfoundland to Victoria, British Columbia, and northwest to Whitehorse, Yukon. The Centre in Québec City became less viable due to small size and competing Francophone offerings from the Fédération des astronomes amateurs du Québec (FAAQ). Our inability to provide service and publications in both official languages on an on-going basis no doubt has contributed to this situation. We expect many members will transition to "members at large," unattached to a Centre, in addition to joining an FAAQ club in their area. The remaining Centres are healthy, and we hope to grow the membership and possibly expand to new cities in Canada. Our strategic plan calls for us to find new ways to grow your Society in a sustainable way, being mindful of financial and volunteer resources.

Our 5100 members include well over 500 volunteers who deliver lectures, run events, conduct observing sessions, workshops, and educational programs. Over 150 volunteers support our Society's efforts directly by creating publications, operating our programs, participating on committees, and saving our night skies from light pollution through the adoption of good outdoor lighting. Countless hours are invested annually by our member volunteers to bring the science of Astronomy to all people in Canada.

People of all ages here in Canada and internationally connect with your RASC through social media, the internet, and traditional media such as radio, television, and print. When there is current news regarding astronomy and space, we're sharing insights on national television and radio with appearances by your Society's Executive Director, President, and volunteers across Canada.

The RASC owns *SkyNews* magazine, Canada's only popular science publication, with over 20,000 readers. The magazine shares news, insights, practical tips, stargazing advice, star charts for observing, and inspirational stories about adventures under the night sky. The RASC provides *SkyNews* with shared office space and some administrative resources on a cost-recovery basis.

The RASC *Journal* is a science journal, available on a subscription basis in print and digital download. This bimonthly publication disseminates professional and advanced amateur articles and scientific papers. Member fees include both JRASC and *SkyNews* subscriptions, in addition to an *Observer's Handbook* and we're proud of the Society's ability to provide members with relevant and valuable benefits since 1868.

Volunteers create our annual publications such as the *Observer's Handbook* reaching over 9500 people. Our *Handbook* and *Observer's Calendar* generate significant revenue to enable the Society to achieve its charitable aims. We create, sell, distribute, and provide astronomy books, teacher materials, and astronomy-related merchandise. Our ecommerce site (click "Shop" at [www.rasc.ca](http://www.rasc.ca)) helps us distribute orders online or through our Society Office. Proceeds help support RASC activities, such as education, outreach, and the fight to preserve our starry skies with good outdoor lighting.

Our General Assembly, including the annual meeting of the members, was hosted by the Ottawa Centre, around Canada's 150th anniversary celebration. Algonquin College provided first-class facilities, and a few hundred members converged on Ottawa for presentations, meetings, astrophotography displays, and workshops, in addition to business meetings related to the operation of the Society. Several commercial organizations supported the event as sponsors. The Ruth Northcott Memorial Lecture was open to the public and featured Dr. Eric Steinbring of the National Research Council, on the topic of Astronomy from Coast to Coast to Coast.

As part of the Strategic Plan we adopted in 2016, we are creating a welcoming, diverse, safe, and collaborative culture reflective of Canada's population. Our membership primarily consists of established people in their middle years and those in retirement. Some joined when they were students and went on to make amazing discoveries, including finding planets around other worlds. Students have won recognition at the local Centre or regional science-fair level and went on to the Canada-Wide Science Fair and are now on the Board of our Society, including your current President. Today's youth members often re-engage with RASC activities after university when they have more free time.

We are working to ensure our culture aligns with Canada's evolving demographics, and to find ways to re-engage and retain members. Member churn is under 20%, and our Strategic Plan outlined steps to bring this down by both improving the culture and by creating "inreach" programs to better connect with members that we may lose. We recognized we need to ensure people are engaged early and continue to grow in their knowledge, skills, and passion for the night sky.

As part of our efforts, the Society is updating policies concerning conduct of members, to reduce and eliminate potential instances of harassment, and to be more transparent and accountable. We believe this will help improve diversity, openness, member retention, and to eliminate problems. Recent news items have touched on harassment of all kinds, and the Society wants to ensure we have a good environment for all its members and the community we serve.

Partnerships are areas we intend to build on. Collaboration with francophone astronomy clubs through the FAAQ and the professional Canadian Astronomical Society (CASCA) can grow even further. These organizations have co-sponsored educational materials, astronomy programs, lectures, the Qilak award, and more. It is hoped this will continue in the coming years in even more fruitful ways. The RASC co-sponsored the Helen Sawyer Hogg Lecture, presented by Dr. Fiona Harrison of the California Institute of Technology (Caltech) at the CASCA annual meeting.

The Society continues to manage its finances carefully and is developing new sources of revenue. In the fall of 2017, we began



developing some new publications that will be available for sale. We also hired a professional fundraising consultant to assist us with aligning our existing fundraising activities to be more productive, so that we can achieve more.

This past summer, North Americans were treated to a spectacular total solar eclipse. The RASC procured and distributed over 10,000 safe eclipse glasses, allowing members of the public to view the Moon's passage in front of the Sun without worry.

The Society maintains extensive archives that will be accessible in the spring of 2018, when we open a small library space at our Dundas St. office in Toronto. This will also include a small meeting space and museum artifacts, including our meteorite collection and historic items.

Our plan is to reach more schoolchildren and educators, build on our membership base, and engage the public more frequently in the coming year. We have started efforts toward providing a telescope that can be used by the public for astroimaging and science.

We have also partnered with provincial and national parks to create Dark-Sky Preserves, so the unspoiled night sky can be enjoyed by more people.

Please support our journey. I encourage you to assist us by donating to the Society at online at [www.rasc.ca](http://www.rasc.ca). If you are considering a Legacy Gift, our staff would be pleased to work with you and your financial advisors to arrange a planned gift that best suits your goals.

On a personal note, as President of the Society and chair of the Board of Directors, I wish to express my gratitude to the hundreds of people within the Society and in the larger community who help the RASC reach more people and help them learn and enjoy the night sky.

**Colin Haig**  
*President*

## EXECUTIVE DIRECTOR'S REPORT

The year 2017 was an amazing one for the Society. Astronomically, the highlight was the spectacular total solar eclipse across the United States. Hundreds of members travelled south to the path of totality and stood in the Moon's shadow, many for the first time. At home, members across the country hosted public observing sessions of the partial eclipse. Armed with solar filters and information sheets to hand out and telescopes equipped for safe solar observing, everyone was inundated with crowds ten times larger than expected. Many members are already preparing for the Canadian total solar eclipse in April 2024.

Canada marked its 150th birthday in July. The Ottawa Centre hosted the General Assembly on the Canada Day weekend, which included an excellent program of speakers and events. To mark the anniversary, the Society held its first coast-to-coast-to-coast National Star Party on July 29.

While Canada celebrated its 150th anniversary, we prepared to celebrate ours in 2018. A working group headed by Randall Rosenfeld has been planning our celebration throughout 2017. The kickoff on 2018 January 27 was marked by a coast-to-coast 6-hour online celebration hosted by Paul Delaney, with participation from several Centres and videotaped congratulations from various groups and individuals. Congratulations to the 150th anniversary working group for planning a year of exciting events to celebrate this milestone in RASC history. A highlight will be the General Assembly in Calgary in late June.

Check out the 150th website at <https://rasc.ca/2018> to see all the planned events.

A special 150th anniversary project will fundraise to acquire a robotic telescope. Once operational, members will have access to data year-round and be able to participate in science research projects, astrophotography programs, and public outreach events.

Over the New Year, we expanded the Society office space, creating a new History Centre. This new space will serve as a storage and display area for our archives, a meeting space, and an area to hold public meetings and presentations.

I congratulate the Centres for another year of outstanding astronomical activities, and continue to be impressed by the commitment and dedication shown by our members in promoting astro-

my and its allied sciences. Hundreds of volunteers bring astronomy to new members and to the public each year.

A big thank you to our hard-working Board of Directors, and welcome to new Board members Anthony Gucciardo, Michael Watson, and Dr. Robert Thacker.

Several volunteers are responsible for the ongoing job of producing our publications. The publications are critical to promoting astronomy, and they help us achieve our mandate, inform members of news and activities, and generate income for the Society.

James Edgar leads a team of editors, proofreaders, and contributors to produce the annual world-renowned *Observer's Handbook*. Nicole Mortillaro leads a team of editors, proofreaders, designers, and contributors to produce our excellent *Journal*. James Edgar works as Production Manager of the *Journal*, and with the skilled help of Halifax member, Catherine Berry, produces the *Annual Report*. Paul Gray is the editor of the outstanding *Observer's Calendar*. David Garner is the editor of both the *Bulletin* and the *National Newsletter*, which provide timely information to the membership. A big thank you to the entire team!

Part of my job is to run *SkyNews* and its website. We have an incredibly talented team who continue to make *SkyNews* the best astronomy magazine anywhere. Editor Gary Seronik and his team of writers produce high-quality material that is timely and extremely useful for people new to astronomy—both observers and those who just like to read about the latest in astronomical research and discoveries. Our production team is the best—thanks to Colleen Moloney, Janice McLean, Susan Dickinson, and David Webster for producing each issue and making each one better than before. We are glad our Editor Emeritus Terry Dickinson continues to write for *SkyNews*. Gary and Ellen Rooney (a husband & wife team) keep the website humming and populated with the latest news and astrophotos.

*SkyNews* is an astronomy resource for the RASC. To ensure its continued success, I ask all members to support the advertisers both in the magazine and on the website. Pass your copy along to a young astronomer or interested adult, and buy some extra subscriptions for your friends, your doctor's office, or school library. A big thank you to all the Centres that bought bulk copies to distribute to potential members at meetings and outreach events. This helps a lot!

I welcome Lisa Di Veto to the Society team. Lisa is a fundraising consultant with many years of experience. Lisa is helping us set up a framework for raising funds to support new and exciting projects.

We are fortunate to have a skilled and devoted team working for the Society in the Toronto office. Renata Koziol handles the finances for both the RASC and *SkyNews*. Julia Neeser runs the office and handles membership and customer queries. I am always amazed at how they do what they do. On August 21 (eclipse day), when my wife, Betty Robinson, and I were off observing totality, Renata and Julia handled a long lineup of people hoping to get their hands on solar viewers. After the throng was served, they went out to the street and showed the eclipse to passers-by.

Running the Society is a big job; we could not do it without the support of our members.

We regret that the Québec Centre (established in 1942) has folded for lack of membership. We intend to continue our relationship with the astronomers in Québec City, supporting them in their outreach efforts.

I note the passing of two good friends in 2017. Dr. Robert Garrison was a Past President—he was on the Executive when I was President in 1998–2000. Bob was a great supporter of the RASC and very active in public outreach. Because he taught a Life in the Universe course at the University of Toronto, the media always reached out to him for an interview when this topic was in the news. Rosemary Freeman also passed away in 2017. Rosemary was the Society's Executive Secretary from the mid-1970s to the mid-1990s—in three separate office addresses. Always friendly, she served the Society well as we moved the office into the computer age.

Clear skies in 2018!

**Randy Attwood**  
*Executive Director*

## SECRETARY'S MESSAGE

The Board met 16 times in 2017, travelling twice to Calgary to participate in Strategic Planning Sessions and once to Toronto. An increasing amount of Board business is conducted through email exchanges and votes.

The Public Speaker Program Fund was used one more time this year than last (16 applications). The amount refunded to Centres is \$5485.49, down from last year (\$6939.18). This was because three speakers for the Sunshine Coast Centre declined reimbursement. If they'd accepted reimbursement, this would have pushed the figure for this year up \$764.64 to \$6250.13, which would still be under last year's figure. Another reason that the amount is down is that the request for \$5770 from the PSP to subsidize speakers at the Ottawa GA was turned down, with the organizers being referred to other sources of funding. The PSP had been increasingly used by General Assemblies in recent years to subsidize their speaker programs and this practice was ended as the Public Speaker Program is meant to allow isolated and/or financially disadvantaged Centres to bring in speakers. Permitting GA claims for a single event was reducing the amount available to these Centres.

Changes to the Policy Manual, include revisions to the Committee Terms of Reference (Board of Directors Compensation), revisions to C10 Observing Committee membership, G7 General Assembly reporting limits, G10 (addition of Reimbursement for Revenue-Generating Publications), G25 Conflict of Interest, G27 Gifts, Appendix A, the Board of Directors Code of Conduct,

An On-Boarding Manual for the Board of Directors, and a Centres Manual were released by the Board. The Centres Manual will be a "living document" for Centres to add their own ideas and comments.

We offer condolences to the families of the following members who passed during 2017: Mississauga: William F Bohnhardt; Montréal: Ian Harris; New Brunswick: Laurie Mersereau; Okanagan: Luke Kurvers; Ottawa: Paul Boltwood, Arthur Griffin, Eric Kujala; Toronto: Bob Garrison, Rosemary Freeman; Yukon: Sandra Peacock.

**Charles Ennis**  
*National Secretary*

Note: The complete Annual Report is available on-line at:  
[www.rasc.ca/annual-report-2017-extended](http://www.rasc.ca/annual-report-2017-extended)

Should you encounter any problems with logging in, read this page:  
[www.rasc.ca/login-assistance](http://www.rasc.ca/login-assistance)

The extended version includes the following:

- 2017 Annual General Meeting Minutes
- 2017 Annual Reports from Centres
- 2018 Award Winners
- 2018 Centre Addresses and Executives
- 2018 National Council

## Membership Statistics 2007-2017

Centre	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Belleville	26	28	33	28	31	30	31	37	26	32	35
Calgary	458	421	460	434	381	336	282	271	300	317	313
Charlottetown	0	0	0	7	13	20	19	25	24	24	22
Edmonton	332	302	294	274	277	229	235	260	257	258	255
Halifax	172	164	172	170	169	153	154	159	155	157	162
Hamilton	113	111	116	109	103	78	61	66	70	76	80
Kingston	64	67	65	72	75	66	66	74	90	98	106
Kitchener-Waterloo	135	114	126	130	109	115	106	115	116	118	104
London	115	119	124	129	110	126	104	118	97	101	104
Mississauga	183	170	179	188	168	132	123	120	127	120	103
C.F de Montréal	18	20	17	18	16	18	20	22	24	23	28
Montréal	143	135	126	117	109	110	91	87	103	107	99
New Brunswick	108	91	88	77	66	68	68	66	75	79	88
Niagara	95	88	78	73	62	69	69	71	82	97	104
Okanagan	133	133	122	124	115	106	92	116	103	88	86
Ottawa	372	358	361	343	319	325	328	370	389	410	416
Prince George	92	99	76	57	66	63	69	64	64	79	67
Québec	13	15	15	18	16	20	20	17	17	35	44
Regina	78	88	111	94	80	75	62	62	52	48	55
St. John's	60	61	58	57	58	47	44	45	48	47	52
Sarnia	11	15	14	20	12	11	15	15	19	24	25
Saskatoon	85	83	75	73	68	70	70	72	71	71	78
Sunshine Coast	72	65	69	50	43	32	38	35	32		
Thunder Bay	45	46	49	45	51	50	46	46	44	37	41
Toronto	824	860	904	869	782	611	573	554	502	506	610
Vancouver	254	236	254	217	198	226	228	244	251	263	256
Victoria	257	235	216	202	176	163	164	166	185	173	188
Windsor	116	106	107	96	84	90	100	96	96	98	94
Winnipeg	240	214	228	221	210	178	180	168	162	169	157
Yukon	32	44									
Unattached	432	413	429	431	428	446	435	434	459	530	561
<b>Honorary</b>	15	15	15	15	15	15	15	15	15	15	14
	<b>5093</b>	<b>4916</b>	<b>4981</b>	<b>4760</b>	<b>4410</b>	<b>4077</b>	<b>3908</b>	<b>4010</b>	<b>4055</b>	<b>4216</b>	<b>4347</b>

### Membership by Type

Type	Number	% of Total
Ordinary	3807	74.8
Family	804	15.7
Life	287	5.7
Youth	180	3.5
Honorary	(15)	.3

### Membership by Country

Country	Number	% of Total
Canada	4879	95.8
USA	187	3.7
Other	27	.5

# TREASURER'S MESSAGE

Two key questions have guided me while in my first term as Treasurer:

1. What do we need from our budget to accomplish our objectives?
2. What do we want the RASC to look like in the future, in order to remain viable, relevant, and sustainable?

By emphasizing that we need to use resources properly, ensuring projects, committees, and operations are time-lined, properly budgeted, transparent, accountable, and measured with key performance indicators (KPI) in accordance to the Strategic Plan, we can focus on:

- Ensuring that our front office staff are adequately trained and have access to the right tools and skills; and
- Ensuring that RASC finances are sustainable.

It is important to remember that strategic planning is an organization's process of defining its strategy, or direction, and allocating resources to pursue this strategy. It also extends to control mechanisms for guiding the implementation of the strategy.

We are conducting a total review of the budget's incomes and expenses, to see what we can add, improve, or remove. This has already led to changes in Policies G19, 20, & 21, which have been completely revamped and/or updated, to meet current and future Society needs. Scotia McLeod-managed investments were reviewed; Society reports to the Canada Revenue Agency were reviewed; travel expense policy was thoroughly reviewed. The Finance Committee created a PowerPoint document "RASC Budget Workshop for Centres," distributed in November 2017, to ensure Centres understood:

- Strategic planning, resource allocation, budgeting
- Cash management
- Association profits and financial reserves
- Financial responsibilities of the Board of Directors
- Financial accountability and audits
- Types of funding
- Fundraising
- Fundraising laws and regulations
- Grant proposals
- References / Useful Links
- Important Dates & Deadlines for Centre Treasurers

This document was made to facilitate annual reporting, for Centres to meet municipal/Provincial/Territorial/Federal (Canada Revenue Agency) regulations. Contact the Finance Committee if you have questions, comments, or concerns.

To ensure a consistent and competent oversight over all aspects of financial management, the Finance Committee works closely with Renata Koziol at the Society Office, who always goes above and beyond for the Society and has provided many hours of support, guidance, and wisdom. Thank you, Renata, for everything you do for the membership, and the RASC!

Thanks to the other members of the Finance Committee for helping give you, the members, the best membership service for your money: Randy Attwood, Colin Haig, Craig Levine, Robyn Foret, and Arun Rau.

Thanks also to the RASC's external financial supporters, who work in partnership with the RASC: Michele Tkachenko from Tinkham & Associates, and Shannon Boutilier from Scotia McLeod Wealth Management.

During my first year, I have learned that our organization has a "charity mentality," tending to place emphasis on costs rather than investment. We do not seem to be comfortable with thriving, and only recently have we started to embrace a mindset of changes such as the creation of a Fundraising Committee and sponsorships. We have been working closely with Lisa Di Veto, to see if there are ways our Society can implement many of her ideas, as well as new approaches. Thank you, Lisa, for all your hard work!

It has taken the better part of the year to get a firm grasp of all the people and ways the RASC operates; from the office staff, member benefits, services, sponsorships, donations, investments, assets, fundraising, publications, and SkyNews Inc..

That said, the many constructive comments brought forward by the members, Centre Presidents, and/or National Council have been heeded. For the RASC to better reach its objectives (outlined in the Strategic Plan), to move forward, it can no longer operate in a "business-as-usual" model. Some things will continue to be improved, others will need to be removed, and some will need to be innovated, or re-engineered.

The main duty of Treasurer is to oversee the financial administration of the organisation, review procedures and financial reporting, advise the Board of Directors on financial strategy, and on fundraising opportunities and objectives.

## Donations, and New Sources of Revenue

**DONATIONS:** Donations were down in 2017 as compared to other years. Our new Fundraising champion, Lisa Di Veto, came on board in October to help us improve donations using her various skills and resources. Lisa and the Fundraising Committee are working hard to get more donations through grants, events, and projects. Members are encouraged to donate whenever possible.

**NEW SOURCES OF REVENUE:** The Finance Committee and Fundraising Committee are actively looking for new sources of revenue. New projects, such as publication of the *Solar Observer's Handbook* and North Studio's website re-work, have all been approved to help the RASC get new revenue.

## Closing Comments

In the coming months, hard choices will need to be made by every member in the Society, and on the Board of Directors. The world of finances is not as stable as it once was, and as identified above, the RASC will not always be guaranteed a positive income. We need to work collaboratively to meet the changing economy and the modern world. For the future, costs will continue to rise in all sectors of our economy: food, gas, oil, postage & shipping, and the RASC will need to meet those challenges head-on. A careful balance of improving membership and Centre services and being sustainable is possible—we need each of you to help us reach those goals together!

**Anthony Gucciardo**  
*Treasurer*



# AUDITOR'S REPORT

## *Tinkham & Associates LLP* CHARTERED ACCOUNTANTS

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To the Members of  
THE ROYAL ASTRONOMICAL SOCIETY OF CANADA  
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

We have audited the accompanying financial statements of The Royal Astronomical Society of Canada/La Société Royale D'Astronomie Du Canada, which comprise the balance sheet as at December 31, 2017 and the statements of revenue and expenses, changes in net assets and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these 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.

### **Auditor's Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our qualified audit opinion.

### **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 revenues over expenses for the year, assets or unrestricted net assets.

### **Qualified Opinion**

In our opinion, except for the possible effects of the matter described in the Basis for Qualified Opinion paragraph, the financial statements present fairly, in all material respects, the financial position of the Society as at December 31, 2017 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.

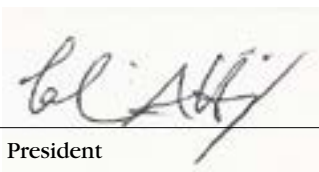
TORONTO, Ontario  
February 28, 2018

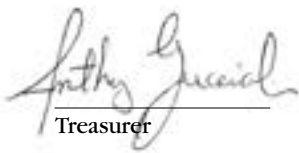
*Tinkham & Associates LLP*  
LICENSED PUBLIC ACCOUNTANTS

# BALANCE SHEET

As at December 31	2017	2016
<b>Assets</b>		
Current		
Cash	\$ 77,436	\$ 116,894
Accounts receivable	36,990	25,136
Receivable from SkyNews Inc. (note 5)	9,628	5,982
Inventory	17,608	31,168
Prepaid expenses	23,340	19,521
	<b>165,002</b>	<b>198,701</b>
Long Term		
Investments (note 4)	859,942	877,646
Investment in SkyNews Inc. (note 5)	215,238	212,555
Capital assets (note 6)		
Tangible assets	6,786	5,026
Intangible assets	41,455	34,379
	<b>\$ 1,288,423</b>	<b>\$ 1,328,307</b>
<b>Liabilities</b>		
Current liabilities		
Accounts payable and accrued charges	\$ 29,434	\$ 30,055
Deferred revenue		
Membership fees for ensuing years	123,662	121,181
Journal subscriptions	18,918	14,694
Unamortized life membership fees (note 7)	21,202	23,852
	<b>193,216</b>	<b>189,782</b>
<b>Net Assets</b>		
Unrestricted	542,097	601,999
Internally restricted (note 9)	553,110	536,526
	<b>1,095,207</b>	<b>1,138,525</b>
	<b>1,288,423</b>	<b>1,328,307</b>
Commitment (note 8)		<i>See accompanying notes to financial statements</i>

On Behalf of the Board

  
President

  
Treasurer

# STATEMENT OF CHANGES IN NET ASSETS

	Internally Restricted (note 9)	Unrestricted	2017	2016
Year ended December 31				
Balance, beginning of year	\$ 536,526	\$ 601,999	\$ 1,138,525	\$ 1,074,234
Excess of expenditures over revenue for the year	-	(43,318)	(43,318)	64,291
Transfers (note 9)	16,584	(16,584)	-	-
Balance, end of year	\$ 553,110	\$ 542,097	\$ 1,095,207	\$ 1,138,525

*See accompanying notes to financial statements*

# STATEMENT OF REVENUE AND EXPENDITURE

Year ended December 31	2017	2016
<b>Revenue</b>		
Membership fee revenue	\$ 212,743	\$ 211,842
Publication revenue		
<i>Observer's Handbook</i>	121,033	117,836
<i>Journal</i>	35,467	39,133
<i>Observer's Calendar</i>	35,354	32,376
Shipping and Handling	35,249	38,706
Other Publications	7,436	17,273
Educational Aids	4,055	4,420
	238,594	249,744
Miscellaneous income		
Promotional products	33,381	7,881
Donations	21,420	23,489
Other Income	12,363	8,992
<i>SkyNews</i> (note 5)	2,683	1,055
	69,847	41,417
Investment Income (net)		
Gain (loss) on investments	25,287	49,877
Interest and dividends	19,879	21,017
Investment manager fees	(11,658)	(10,313)
	33,508	60,581
<b>Total Revenue</b>	<b>554,692</b>	<b>563,584</b>
<b>Expenditures</b>		
Publication costs		
<i>Journal</i>	47,699	46,856
Freight and handling costs	38,072	32,623
Cost of publications sold	34,696	37,280
<i>Observer's Handbook</i>	2,614	4,772
	123,081	121,531
Operating costs		
Office salaries and employee benefits	190,694	171,439
Membership services	92,717	85,014
Committees	48,007	15,738
Travel expenses	41,592	29,677
Services	37,769	36,386
Office expenses	34,950	37,746
Occupancy	28,680	26,500
Amortization of capital assets	25,539	17,539
Advertising and marketing	13,289	8,514
Cost of promotional items sold	7,667	4,773
Strategic Planning	6,150	6,150
Recovery of office salaries and rent (note 5)	(52,125)	(61,714)
	474,929	377,762
<b>Total Expenses</b>	<b>598,010</b>	<b>499,293</b>
Excess of revenue over expenses (expenses over revenue) for the year	\$ (43,318)	\$ 64,291

See accompanying notes to financial statements

# STATEMENT OF CASH FLOWS

Year ended December 31	2017	2016
<b>Cash provided (used) by operating activities</b>		
Excess of revenue over expenditures for the year	\$ (43,318)	\$ 64,291
Charges not requiring a current cash payment		
Amortization of capital assets	25,539	17,539
Amortization of life membership fees	(2,650)	(2,650)
Income of SkyNews Inc.	(2,683)	(1,055)
	<b>(23,112)</b>	<b>78,125</b>
Changes in non-cash working capital components		
Accounts receivable and receivable from SkyNews Inc.	(15,500)	13,778
Inventory	13,560	(4,950)
Prepaid Expenses	(3,819)	(9,349)
Accounts payable and accrued liabilities	(621)	4,514
Deferred revenues	6,705	(12,211)
	<b>(22,787)</b>	<b>69,907</b>
<b>Cash provided (used) by investing activities</b>		
Investments (net)	17,704	(49,232)
Purchase of capital assets	(34,375)	(14,381)
	<b>(16,671)</b>	<b>(63,613)</b>
Increase (decrease) in cash during the year	<b>(39,458)</b>	<b>6,294</b>
<b>Cash, beginning of year</b>	<b>\$ 116,894</b>	<b>110,600</b>
<b>Cash, end of year</b>	<b>\$ 77,436</b>	<b>\$ 116,894</b>



# NOTES TO FINANCIAL STATEMENTS

## 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 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, 2015, no such impairment exists.

Amortization has been determined using a straight-line basis over the estimated useful lives as follows:

Tangible assets:	Computer hardware	3 years
	Office furniture	10 years
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 organization 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.

#### (ii) Contributions

The organization 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 organization 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 excess of revenue over expenditures 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 charges.

(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 statements of revenue and expenses in the period the reversal occurs.

(iii) Transaction costs

Transaction costs are recognized in the statements of operations 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.

### 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 1960 June 5. 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, 2017 are \$145,407 (2016 - \$146,558) 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	2017	2016
Managed portfolio at Scotia McLeod		
Fixed income investments	\$ 377,308	\$ 414,672
Canadian equity investments	302,970	276,076
US equity investments	147,949	119,679
Cash	31,715	67,219
	<b>\$ 859,942</b>	<b>\$ 877,646</b>

The actively managed portfolio with Scotia Wealth Management (ScotiaMcLeod) includes 17 fixed income investments (2016—13 investments) comprised of government and corporate bonds with stated interest rates ranging from 1.20% to 3.75% (2016 - 1.51% to 3.80%), maturing from August 9, 2018 to June 15, 2022 (2016 - June 15, 2017 to March 15, 2022).

The Canadian equity investments include share and trust units of 29 Canadian entities (2016—30 Canadian entities). The single largest holding is 265 shares of Toronto-Dominion Bank with a market value of \$19,517 (2016—429 shares of Toronto-Dominion Bank with a market value of \$28,408).

The U.S. equity investments include share and trust units of 34 entities (2016—33 entities). The single largest holding is 61 shares of Microsoft Corp. with a market value of \$5,218 US\$ (2016 - 88 shares of Citigroup Inc. with a market value of \$5,230 US\$)

The fixed income and equity investments have been recorded at market value based on information provided by Scotia Wealth Management (ScotiaMcLeod).

## 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 period from the date of purchase to March 31, 2017 has been recognized in the financial statements of the Society in 2017 (2016 - from the date of purchase to March 31, 2016). The following summary is taken from the unaudited financial statements of SkyNews Inc.

As at	2017	2016
Total assets	\$ 119,546	\$ 146,854
Total liabilities	214,198	244,189
Total deficit	(94,652)	(97,345)
	<b>Year ended March 31, 2017</b>	<b>Period ended March 31, 2016</b>
Total revenue	531,159	351,717
Total cost of sales	464,732	306,333
Total expenses	63,744	44,329
Net income for the period	2,683	1,055

The Society has recognized cost recoveries totalling \$52,125 (2016 - \$61,714) for office salaries and rent charged to SkyNews Inc. Included in membership services expense is \$49,748 (2016 - \$45,153) 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 (2016 - \$5,353) 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

	2017		2016	
	Cost	Accumulated Amortization	Cost	Accumulated Amortization
<b>Tangible Assets</b>				
Computer hardware	\$ 15,729	\$ 14,595	\$ 15,729	\$ 12,070
Office furniture	2,629	1,635	2,629	1,263
Library	1		1	-
Leasehold improvements	4,989	332		
	\$ 23,348	\$ 16,562	\$ 18,359	\$ 13,333
Net book value		6,786		\$ 5,026
<b>Intangible assets</b>				
Software	\$ 103,503	\$ 64,009	74,118	\$ 45,622
Website development	11,766	9,805	11,766	5,883
	115,269	73,814	85,884	51,505
Net book value		\$ 41,455		\$ 34,379

## 7. Unamortized life membership fees

	2017	2016
Life membership fees as of January 1	\$ 23,852	\$ 26,502
Deduct: Amortization to income	(2,650)	(2,650)
Balance, December 31	\$ 21,202	\$ 23,852

## 8. Commitment

The Society leases office space and has entered a new lease agreement for additional storage space. The leases extend to March 31, 2019. The minimum annual payments required under the lease, excluding an estimate of the proportionate share of property taxes, maintenance and insurance for the premises, for fiscal 2018: \$24,629 and 2019: \$6,267. Property tax, maintenance and insurance in addition to the base rent is estimated at \$30,000 for 2018.

## 9. Internally restricted net assets

The Society has internally restricted certain funds. The Ruth Northcott Fund was established in 1969 and funds are used for a variety of specified purposes as approved by the Board of Directors related to public education and outreach. 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.

An amount equal to the investment income 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.

<b>Schedule 1: Internally Restricted Net Assets</b>				<b>2017</b>	<b>2016</b>
	<b>Sustaining Membership Fund</b>	<b>Ruth Northcott Fund</b>	<b>P. M. Millman Endowment Fund</b>	<b>Total</b>	<b>Total</b>
Fund balance, January 1	\$ 7,557	\$ 218,633	\$ 310,336	\$ 536,526	\$ 510,086
Transferred from Unrestricted net assets:					
Interest	222	6,435	9,134	15,791	28,767
Donations	2,438	3,853	652	6,943	4,355
Expenses	(6,150)	-	-	(6,150)	(6,682)
	(3,490)	10,288	9,786	16,584	26,440
Balance, December 31	\$ 4,067	\$ 228,921	\$ 320,122	\$ 553,110	\$ 536,526

## 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. 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.

### 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 and investments denominated in U.S.\$ totalling \$171,548 at December 31, 2017 (2016 - \$139,254). The exchange rate used to convert US\$ assets at December 31, 2017 is \$1 US = \$1.2545 Cdn. (2016 - \$1.3427 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.



# ANNUAL MEETING MINUTES—2017

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

### Minutes of the Annual General Meeting 2017

09:00 EDT, Sunday 2017 July 2, Algonquin College, Ottawa, Ontario

BOD Members in Attendance: Colin Haig, Craig Levine, Chris Gainor, Robyn Foret, Anthony Gucciardo, Charles Ennis, Heather Laird, Michael Watson, Randy Attwood. Absent: Rob Thacker.

Twenty Centres were represented, with about 40 members and guests present.

#### 1. Call to Order

Chair Craig Levine called the meeting to order at 9:02.

#### 2. Previous Minutes

##### Motion AGM 17-1

Moved by Don Town, seconded by Eric Briggs, to approve the minutes as previously distributed. No discussion.

Motion AGM 17-1 was CARRIED.

#### 3. Officer's Reports:

##### President

Craig Levine summarized the Society's new Strategic Plan, describing how the Board would provide governance, oversight, and vision and how the Executive Director's office would focus on execution of the plan. Craig spoke to the need for transparency, achievability, and measurability. Craig spoke of how it was incumbent upon us to work towards a Society free of harassment, welcoming to youth, women, and diverse ethnic cultures. We must encourage diversity and engage youth. Craig described the Society as being reactive in the past, and the need to take a long view in future, with long term goals. Craig described the Strategic Plan as a five-year plan which was a living document, aware of changing circumstances and responding to changes in Canada's economic environment. Changes to Board structure have given us flexibility, the ability to respond and "tack with the wind" quickly, responding to needs. Craig spoke of the lengthy process of creating changes to the governance structure. Now that we've made that change, we can work with the President's list and can now focus on Centres and their needs. Craig then summarized the services that National Office provides to Centres. We must be driven towards service and value to Centres, growing to develop sustainable resources. Craig reminded attendees that this year saw the formation of our first fundraising committee, working to eliminate dependence on foreign exchange and investments and identify special projects to attract donations and to provide more funds for services. We need to change to a charitable culture and focus on outreach to connect with diverse communities to "fill out big tent."

##### 1st Vice President

Chris Gainor summarized work on publications, describing automatic turn over mostly due to staff of the *Journal*, *Observer's Handbook*, etc. This was an easy job, but got more complicated moving into stand-alone publications such as *Building a Small Observatory* and the *Explore the Universe Guide*. He anticipated upgrades and changes to facilitate work in the coming year, possibly the introduction of a production coordinator, and encouraged attendees to share any ideas they may have. Chris said the Constitution Committee had been very quiet lately, with the

major issue being waiting for new Societies Act in Ontario to be proclaimed. Chris said the Board would be looking at the role of the Constitution Committee this year.

##### 2nd Vice President

Robyn Foret submitted a report on-line prior to the GA which he had just amended and would post on the website soon. Robyn formed a working group for the Strategic Plan at the National Council meeting at the 2016 GA in London, taking output, creating a chart to identify must do's, could do's. Robyn thanked the working group for their hard work which was accomplished on a short time line, producing a great outcome. Robyn spoke of governance and liaison to committees. With regards to the Nominating Committee; we almost had an election, which ended up in a process of acclamation. Robyn summarized the term limits of the new Board members. Robyn encouraged members to put their names forward to serve on the Board in future.

##### Secretary

Charles Ennis submitted a report published in the Annual Report. Charles summarized the status of the Public Speakers Program, which is finally being used close to capacity, though this was due to funds being allocated to speakers at the GA in the last two years, a practice that the Board has ended. Charles spoke of the new *Centres Manual* and *On-Boarding Manuals*, both living documents to assist Centres.

##### Treasurer

Colin Haig submitted a financial statement published in the Annual Report. Colin stepped into the Treasurer's position last January. Colin thanked Denis Grey and Susan Yeo for their service, and he described it as "quick learning" when he stepped in. Haig summarized the financials and the situation with the Helm Fund. There is a need to disperse proceeds annually and file a return with the CRA because if this isn't done, the Fund can be taxed. The Toronto Centre operating the David Dunlap was eligible to receive Helm funds, but in 2017 this was discontinued, and the Society must find a new recipient. The Society was 6 days late in filing, in part because the Toronto Centre was delayed in getting reports to the Treasurer. Colin praised Tinkham and Associates, who worked extensively with Renata. Colin described the auditor, who works on our behalf, as providing good scrutiny and thanked them for their assistance. Colin praised Renata for her efforts in reducing the Society's credit card charges. Colin briefly summarized the honorarium payment sent out automatically in error to an editor who had to return it due to Ontario regulations. Changes have been made to the *Policy Manual* to address this and other conflict of interest issues.

##### Motion AGM 17-2

Moved by Randy Boddam, seconded by Paul Heath, that our auditor be reappointed.

Motion AGM 17-2 was CARRIED.

Colin then summarized the financials for SkyNews Inc., which is treated by the Society as an investment. SkyNews Inc. is a separate, private corporation owned by the RASC. Colin described how the RASC also has large investments with Scotia McLeod and how we must be prudent and take care with these investments. Colin described how the publishing business has changed radically due to the internet. The Society totally depends on subscriptions and ad revenue, both of which are slowly declining. The RASC has defrayed SkyNews Inc. costs by services provided by RASC head

office. Colin pointed out that the year end for SkyNews Inc. is offset 3 months from the Society.

A member asked: "Are the financials for SkyNews Inc. published?" Colin replied: "No, it is a separate corporation."

Colin then summarized the Society's balance sheet. Assets year over year stayed close. The Society has cash on hand in its accounts. Receivables are low. SkyNews Inc. is billed for staff time, office services. On the inventory side: the Society has more inventory on hand, greater variety, new books. Colin summarized the new items. Regarding investment: Scotia McLeod did well, increasing the value of our investments. SkyNews Inc. is static. Liabilities nothing out of ordinary. Regarding member fees: Colin summarized net assets and internally restricted or unrestricted funds. Fee revenue up somewhat, publications slightly up, with a slow decline in *Observer's Handbook* and *Calendar* sales, printed *Journal* issues, just below 5% per year decline. Colin described the new US edition *Observer's Handbook*. US exchange rates have helped somewhat. Other publications such as the *Explore the Universe Guide* and *Building a Small Observatory* have brought in a significant amount of cash. Donations last year totaled \$2300, but this year donations are behind expectations. Colin described how donation money goes to programs and activities. Membership fees cover members services. Colin described how nothing in membership fees helps grow our Society or help the Society to achieve its objectives. Projects are funded from publications and donations. Colin described in detail exactly what membership fees cover. At the request of Chris Martin, Colin also summarized the costs of service pins for members.

Colin explained that on the expense side salaries and benefits had been adjusted upward, and that this will happen again this year. Regarding Committee expenses: Colin noticed some Committees are financially efficient, while others ask for money and don't spend it. Colin didn't know if this indicated savings or lack of activity.

Colin reported an excess of revenue over expenses creating a \$64,000 surplus due to investment returns, foreign exchange, and new publications. Some of the costs of the delayed implementation of the iMIS system have been rolled into the first quarter of 2017, so there will be a possible deficit this year.

Colin commented on the 20% membership turnover and how we needed to work on retention. Colin spoke of raising membership fees to cover cost, of rolling out new programs and ideas which required funding, and how some programs, like the Public Speaker's Program, are not fully used. Colin spoke of how programs like the PSP were funded from sustaining donations, and that they haven't been topped up due to a lack of donations, which wasn't a problem before, but is becoming a problem as it becomes used to capacity. Colin encouraged members to make donations to sustaining funds. Colin reported that the loss of the University of Toronto's subscription to JRASC led to a loss of \$2000.

A member asked if renewal by cheques would be better than credit card renewals. Colin reported that the Society had looked at using PayPal, etc., and that credit cards were easy and convenient, allowed for renewals on line, and did not involve staff, which lowered costs. Colin pointed out that merchants were billed fees for high rewards cards and asked members not to use them for renewals if possible.

Robyn Foret announced that he is testing a credit transfer for renewal with Renata's assistance.

Cathy Hall from Kingston noted that demographics had changed, that many of our members were aging, and asked what the status of life members was? Did revenue from life members cover costs? Colin pointed out that there had been a note regarding this in the Annual Report and that it was not quite covering costs for them. Colin said that there were 247 life members left and it would take

between fifteen and twenty years to go to depreciate that amount of money to finally eliminate that category, and that we can't go back to life members to ask for more. Colin pointed out that it would be "wonderful for life members to donate time and dollars to projects." Colin recalled the Society decided life membership was not sustainable a decade ago.

Colin then summarized the work of Heather Laird and the Fundraising Committee, and the plan to hire a consultant.

Nelson Walker from Victoria asked about the difference between assets and intangible assets? Colin described intangible assets as things like software and labour which we can't sell for money.

Glen Hawley then described what had happened regarding life memberships, how when the CRA changed the rules in 2004 we could no longer take revenue and put it towards member services. Glen said the Society came to this realization in 2008, and that the CRA did not penalize us.

Colin spoke of the Society and some Centres being registered as charities and how this differed from Centres who were not registered as charities. In response to a question from the floor from a Toronto representative, who said that it was an error to assume that her Centre was no longer going to be doing outreach at the DDO. Colin explained his understanding of the judgement and the specific rules which applied regarding the Helm Fund, and how the Trustees had been forced to make a decision to avoid taxes, which had been complicated by the Toronto Centre getting their reports in late. Colin assured Toronto Centre that if they got back into operation at the DDO the Trustees of the Helm Fund could continue support.

The meeting was adjourned for a coffee break at this point. At 10:50 hours the meeting was reconvened.

Colin concluded his reports, speaking of the sesquicentennial of the Society next year incurring expenses, some of which were allocated this year and some next year.

### **Motion AGM 17-3**

Moved by Randy Boddam, seconded by Oscar Echeverry, to adopt the annual financial statements as presented for 2016. No further discussion. Motion AGM 17-3 was CARRIED.

The Secretary called for a moment of silence to remember deceased members.

### **Executive Director**

Randy Attwood thanked Colin Haig for stepping up to be Treasurer. Randy stated: "The Society is the Centres" and the strength of our organization compared to astronomy clubs elsewhere. Randy said that the head office had been busy and had a good year. The Strategic Plan was a big step, being the 3rd in 7 years. Randy described how this Strategic Plan was different, focussing on applying and engaging and getting the Society running. This Strategic Plan will take a few years, as there are lots of things to do, and will involve a change in culture. Randy commented the Ottawa Centre for the amazing job they'd done in organizing the GA, and said the Society was indebted to them for picking it up, especially as there had been uncertainty about who was to do it. Randy commented that General Assemblies are labour intensive and said we needed to look at how to make them easier and sustainable.

Randy spoke about the National Star Party, 29 July, and how the FAAQ and other non-RASC clubs were participating. Randy said next year's event may be held near to the Mars opposition. Randy said 25,000 solar viewers had been obtained for the total solar eclipse on 21 August and commented on how many Centres were holding partial eclipse events too. Regarding the Society's 150th anniversary, Randy announced that Canada post would be releasing

two astronomy stamps next year. Randy spoke of how the sesquicentennial would be a great opportunity and how the Society would be hiring a marketing agency to promote our Society next year.

Randy reported on *SkyNews*, with its new *National Newsletter* insert. Randy described how our *Journal* went digital 10 years ago and lost communication with members. We know how many open the digital *Journal*, and it is not a large percentage. Randy thanked Dave Garner and his team for the newsletter. Randy spoke of how *SkyNews* circulation was audited every 6 months, and how advertisers looked at this. Randy encouraged bulk purchases, used to promote Centres, as those copies add to *SkyNews* circulation, adding up to 8,000 - 10,000 to add to circulation audit and encourage advertisers.

Randy thanked the Board for its hard work, recognizing the demand on volunteer time, and said we now have path to follow due to the new Strategic Plan. Volunteers are critical, and Randy encouraged Centres to track and volunteer time, as this is needed for grant applications.

Randy then recognized the Board members stepping down, presenting awards to James Edgar and Randy Boddam.

#### **4. Committee Reports**

##### **Astroimaging**

James Edgar reported for this new Committee, encouraging members to submit more images for the new site on the web.

##### **Awards**

James Edgar noted that no Fellows had been appointed this year, and that Centres should consider making recommendations for Fellows in the future.

##### **Education**

Andrea Misner described work on the Discover the Universe program, as well as educational banners, posted online, which Centres can print on their own.

##### **History**

Randall Rosenfeld submitted a report before the GA. Randall reported on work on the Society's sesquicentennial, starting with the National Star Party January 27, 3 - 8 pm local time, with live streaming moments for each Centre to have a highlight (project lead Paul Delaney). Other initiatives include:

- Cultural connections: partnership with favourite local arts organizations
- Video casts: Leads Randall and Heather.
- Canada Observes: The creation of two banners/mosaics (one a Moon, one a RASC crest), composed of images of Centre members in action. Randall hoped to have this ready for January 2017.
- Viewing the Moon Across Time.
- RASC Imaging Competition: Leads Jim Hesser and Lauri Roche.
- RASC at 150. Writing the history. Chapters for book. Leads Randall and Heather.

##### **Finance**

Colin Haig reminded us that the Treasurer's report is the Finance Committee's report. Colin recognized the hard work of Arun Rau. Colin asked anyone with a financial background to consider volunteering to assist the Finance Committee.

##### **Fundraising**

Heather Laird filed a report before the GA. Heather described how her Committee had obtained advice from Ryan Fraser for the new gift acceptance policy, policy and procedures, and a high-level summary, all of which goes toward donations. Heather described how the Executive Director has been meeting with Leah Eustace

of Blue Canoe, about implementing fundraising plus hiring a fundraiser and creating a job description for a fundraising job starting mid September.

##### **IT**

Craig Levine summarized what the IT Committee does and recognized Walter MacDonald for his hard work. Craig spoke of how the Society relied on volunteers in the past and how we needed to revamp our website to align with fundraising and the Strategic Plan and improve user experience. Craig described how the Committee worked on the back end last year, and now the focus had now shifted to the front end. The Society relied on volunteer capital on the past, but contracted a company to help last year. Craig said he'd rather see volunteers focus on things they are good at, and outsource other stuff using service level agreements.

Colin summarized iMIS issues, which he hoped would be wrapped up in 2 weeks.

A member asked about auto renewal for membership. Colin spoke of the expectations and new possibilities of the iMIS upgrade, which needs things to be fixed before we can use it to its potential. Colin spoke of new Payment Card industry (PCI) security standards, payment application audits, and said our Society was small enough to self audit concerns about compliance.

##### **LPA**

Robert Dick submitted a report before the GA. Robert spoke of the LPA's dark preserve programs and the LPA's focus on environmental issues. Robert spoke of a light pollution workshop in August and work on a capital lighting plan with the National Capital Commission and on a municipal flyer to Ontario cities, including LPA best practice for the city of Toronto. Sky quality meters are available for loan. Robert encouraged attendees to take local readings and upload them to the website, as data is needed. The LPA is meeting with parks Canada, who decided not to use urban lighting, but found their distributors only provide urban lighting; they are not using their guidelines to fit vendors.

Eric Briggs brought up a point of order, asking if there was time left in the meeting for repopulating committees. Craig Levine said we don't want to rush this, and will be working with committees to ensure there are enough funds and enough members online, as this was part of the Strategic Plan. Craig said we'd schedule a WebEx meeting to appoint a co chair to the National Council, etc.

##### **Observing Committee**

Alan Whitman reported that this Committee receives and approves observing certificates and that Dave Chapman was the new chair. James Edgar has been updating the website. Alan thanked Julia Neeser for her help.

##### **Special Projects**

Charles Ennis encouraged Centres to use the Special Projects Fund to fund local projects.

##### **Membership and Development**

Chair Roland Deschesne was not present.

Patrick Kelly asked if a new Honorary President was being sought. Craig assured him that this was in progress.

Craig Levine then handed over the President's chair to Colin Haig.

##### **Motion AGM 17-4**

Moved by Patrice Scattolin, seconded by Heather Laird, to adjourn. No further discussion.

Motion AGM 17-4 was CARRIED. Meeting adjourned at 12:16 EDT.

##### **Charles Ennis**

*National Secretary*

# ANNUAL REPORTS FROM THE CENTRES

## BELLEVILLE CENTRE

January	11 members present President Greg Lisk will teach a 10-week astronomy course at Loyalist College. Speaker: David Cotterell: "Astronomy Websites."	August	11 present Speaker: "How to Take Photos of Solar Eclipse." Speaker: Randy Boddam: "Ottawa General Assembly." "How Planetary Nebulae Are Formed." Greg Lisk: "Solar Eclipse of March 9, 2016."  Nine members see total solar eclipse from various spots in the U.S. - Casper, Wyoming; Victor, Idaho; Santee, S.C.; Carbondale, Illinois; Salisbury, N.C. (99% partial) and Shawnee, Wyoming.  Back at home, Don Town and David Billo hosted public observing of the partial solar eclipse from Belleville with several hundred people passing through for a look.
February	16 members present Speaker: Greg Lisk: "General Astronomy." Observing night: February 24, 25.	September	14 present Members' tales, photos, and videos from August's total solar eclipse. Speaker: Randy Boddam "Astrobiology."
March	18 members present Earth Hour - public observing, Zwick's Park, Belleville on March 25 Speaker: Greg Lisk "Life Cycle of Stars." Speaker: Randy Boddam: "What is Life?"	September 22-24	Joint Belleville / Kingston Centres "Fall'n Stars" star party (17th annual) held at Vanderwater Scout Camp, Thomasburgh, Ontario-25 present.
April	11 members present April 29-Astronomy Day. Quinte Regional Science Fair, Loyalist College, Belleville. Club awards two telescopes and two meteorites as prizes for best astronomy-related projects. Speaker: Greg Lisk "Interesting Information from my Astronomy Course...Space Oddities; astronomical technology through the ages-up to and including the James Webb Space Telescope." Observing Night: April 22-5 present. Observing Night: April 29 - public observing.	October	11 present Steve Burr-"Moon Shots." Video: "Konstantin Batygin."
May	15 members present Joseph Shields: "Time and Space." Robert Bates: "My Latest Astrophotos." David Billo: "The Sky For May." Greg Lisk: "Exoplanets."	October 20	Observing Night-Lennox & Addington Dark-Sky Preserve.
June	13 members present Observing night-June 24, Prince Edward Point. Steve Burr: "My Astrophotos." Greg Lisk: "Upcoming Total Solar Eclipse Over the United States." 3 members attend the General Assembly in Ottawa on Canada Day long weekend.	November	14 present Colin Haig, National President, attended tonight as part of his tour of Centres. Mr. Haig did a presentation on his family's trip to view total solar eclipse at Madisonville, Tennessee. He also discussed sexism in astronomy; the certificate program, and fighting light pollution.
July	14 present Speaker: Robert Bates-"Astrophotos." Speaker: Greg Lisk: "What You Actually See in Your Telescope's Eyepiece." Member Donald Town receives RASC Service Award at Ottawa General Assembly. Randy Boddam receives Board Special Award at GA.	November 17	Observing night-Leonids meteor shower-clouded out.
July 15	Annual Star-B-Q at Presqu'ile Provincial Park-10 present. Daytime observing for the public at Presqu'ile park 2:00-4:00 p.m. Also nighttime observing by club for the public at Presqu'ile park. Club does daytime public observing at Presqu'ile every other Saturday for remainder of summer, and nighttime observing every other Tuesday.	December	14 present Speaker: Greg Lisk: "How Far We've Come in Our Understanding of the Universe." Speaker: David Cotterell: "Total Solar Eclipse from Wyoming." December 13/14-Observing Night-Geminids meteor shower. *December 2-Club's annual Christmas dinner-16 present.
July 20-23	8 members attend Starfest.		

**Joanne Burns**  
Secretary



2017 experienced plenty of activity for the Calgary Centre.

Calgary Centre's public outreach efforts hosted over 60 public events, this year, with 15,760 members of the public attending.

Centre members continued participation in assisting initiatives by the University of Calgary (Rothney Astrophysical Observatory Public Nights), Alberta Provincial Parks Star Nights, including Fish Creek Park, Glenbow Park, and Ralph Klein Park. Additionally, members assisted Waterton National Parks seek Dark-Sky status by consulting on responsible lighting. We also participated in the Calgary Youth Science Fair and Brewster Tours with Sulphur Mountain Star Nights in Banff. Members volunteered at Comic Con and The Outdoor Adventure Shows where we sponsored display booths.

Several members' events were conducted, including the annual banquet, Bar-B-Q, Alberta Star-B-Q (at the Eccles Ranch Observatory near Caroline, Alberta), Alberta Star Party (at Starland Campground, near Morrin, Alberta), regularly scheduled General Meetings, NOVA Observing Group and Youth Group at our Wilson Coulee Observatory (WCO) south of Calgary.

The Centre continues to receive generous support from All-Star Telescope of Didsbury, as well as Brewster Tours (the latter were recognized with our Centre's Corporate Award for 2017).

### Membership

The Centre remains static at 450 members, in comparison to last year.

Calgary's webpage continues to attract large numbers to its site, which includes 1,100 pages and 15,000+ images; it received around 2.5 million hits over the year.

At each of our public events, we promote Centre activities, explain the benefits of RASC membership and encourage individuals and families to join. Our social-media presence is covered by Facebook, Astronomy Calgary, Meetup, YouTube, and Twitter, which are visited by the thousands. It is an excellent medium to advertise our programs and events to attract greater numbers. A strong Youth Group program introduces youth and their families to our Centre, and plants a seed for continued, future membership.

### General Meetings

General meetings were held on the third Thursday of the month and featured the following main speakers and topics:

January	Dr. Nic David—presented a talk on the Antikythera Mechanism with emphasis on its archaeology.
February	Chris Ratzlaff—provided a presentation on Chasing Aurora.
March	Randy Atwood spoke to Amateur Astronomy, referring to them as Naturalists of the Night and Dr. Chris Gainor presented on the topic of the Hubble Space Telescope and Amateur Astronomers.
March	(Peter Simm Public Lecture)—Dr. Jocelyn Read, Assistance Professor of Physics at California State University, Fullerton, spoke on Gravitational Waves and Neutron Stars.
April	Chris Cottle—Astro Navigation, Pt. 1.
May	Callie Lissinna—Lift-off Alberta. A presentation on Alberta's first satellite, Albertasat.

September	Bruce McCurdy—Dynamic Astronomy. A personal account of Celestial Observation.
October	Members—Solar Eclipse Presentations. Don Hladiuk, Jeff Zambory, Simon Poole, Nic David, Judy Sterner, & Katherine Peterson each related their experiences during the total solar eclipse of August 21.
November	Russ Chandler (eclipse photos), Don Hladiuk (QM1 Qualification Motor Test #1 by Orbital ATK), Larry McNish (Calgary Centre Website), and Kim & Laurie Sibbald (eclipse and night photos).

In order to advertise RASC merchandise and to offer a modest reduction in cost (shipping), we now conduct a Kitshop twice annually. This endeavour has increased awareness of available items, increased member buy-in, and is a modest way to improve member participation.

### Public Education

Rothney Observatory hosts monthly open houses at which Calgary Centre members provide talks, operate their telescopes, and provide an info table. This event has been highly successful and has proven an excellent venue to spread the word of who we are and what we do.

Astronomy programs with Parks Canada and Alberta Provincial Parks continued with numerous events held in Banff National Park, Waterton National Park, Glenbow Ranch Provincial Park, Ralph Klein Park, and Fish Creek Provincial Park.

We have enjoyed a wonderful partnership with Brewster Tours by providing member telescopes for their customers on top of Sulphur Mountain, Banff, at their newly renovated restaurant facility.

Centre member Don Hladiuk appears on the CBC Radio Eye-Opener show the first Tuesday of every month presenting upcoming Sky Highlights.

Several groups attended tours of WCO, and when skies co-operate, people can view through our C-14 telescope in the dome.

We provided booths at the Calgary Outdoor Adventure Show and Comic Con which attracted huge numbers of curious public.

### Other Activities

The highlight of the year was the August 21 total solar eclipse. There was much activity around planning for the event, advertising to the public, travel, organizing views, and providing presentations of personal experiences.

February 11	Comet 45P was viewed and images captured by some members.
March 29	Mercury, Mars, & Moon formed a nice triangle with the Moon appearing as a thin crescent and Mars at its peak for the season.
April 10	the Moon & Jupiter rose together with the Moon full and Jupiter almost at its brightest.
November 13	Venus & Jupiter shone close and bright.

Special events included the Annual Awards Banquet in January and member's BBQ at the WCO in June, the Star-B-Q in July and the Alberta Star Party in September.

The WCO hosts monthly Observer's Group meetings, NOVA group sessions, and the Youth Group meetings.

Roland Dechesne's social-media efforts have proven to be a significant addition to the Centre's outreach efforts, enjoying over 21,000 visits.

The Telescopes-for-Rent program available to Centre members provides an excellent service to those requiring equipment and continues to be very successful.

The Centre newsletter, *The StarSeeker*, is distributed electronically nine times per year.

Centre Council Meetings were held at the University of Calgary, while General Meetings were held at the Kerby Centre in downtown Calgary.

**George Grant**  
*Secretary*

## EDMONTON CENTRE

### Public Outreach

The 12th annual Beaver Hills Dark Sky Preserve Milky Way Days was held on the Labour Day weekend. This is a joint event involving Parks Canada, Alberta Parks, Strathcona Wilderness Centre, and Ukrainian Village. Saturday's event took place at Miquelon Lake Provincial Park. Sunday was at Elk Island National Park. Activities included two solar viewing events, two nighttime sky viewing events, two talks, two booth setup & takedowns. This is the largest event for the Edmonton Centre, with 30 members and enthusiastic crowds. In 12 years, this was the most people to drop by our scopes—around 3000. No doubt the Canada 150 free admission to National Parks helped the numbers. Both talks were packed and our booth people handed out hundreds of pieces of information—Star Finders, Moon Gazer's Guides, and our own Centre-produced Astro Cards. Alberta Parks brought their portable planetarium to both sites as an added bonus.

### Sky Scan

Edmonton Centre is a major partner in the Sky Scan Science Outreach program, along with the Department of Physics at the University of Alberta (UofA) and the Alberta Science Network. The program uses the universal appeal of astronomy to provide inclusive and accessible learning that inspires youth to a life-long interest and career choices in science. We conduct engaging, astronomically motivated learning activities in Grade 6 and 9 classrooms, as well as at the UofA Observatory, using inquiry-based practices that meet (and exceed) the goals of the Alberta Education curriculum. Our focus is on Edmonton-area schools, but we also go to schools up to one hour away. All programming is free of charge to keep the

learning accessible to all. Funding for this comes from Edmonton Centre, the University of Alberta, and in-kind donations of time from the Alberta Science Network.

Since our programming is tied to the school year, we report our numbers for September 2016–June 2017. Our main programs are:

- **Astronomer in the Classroom**—An astronomer (with a B.Sc. or M.Sc. in astrophysics) visits a school to lead astronomy-related activities and answer astronomy questions from the children. In 2016/17 academic year, we visited 76 classrooms at 35 schools, reaching 1982 students.
- **Visits to the UofA Observatory**—Classes can visit the observatory to look through telescopes either during the daytime or evening. If the sky is cloudy, there are activities involving meteorites instead. In 2016/17 there were 29 field trips to the observatory with a total of 826 students.

In addition, we held a teacher's workshop in November for teachers of Grade 9 Space Exploration Science. We had 20 very enthusiastic teachers participate.

### TWOSE Observatory

RASC members perform two functions at the observatory at Telus World of Science in Edmonton (TWOSE):

- We volunteer as regular help with the public who visit the observatory during regular hours.
- We volunteer at special events at the observatory.

Of the 28 volunteers at the observatory, 17 are RASC members providing 550 volunteer hours. We served about 7080 members of the public in 2017, people who just dropped in to have a look at the stars and to talk to knowledgeable volunteers.

Centre volunteers also give their time at special events at the observatory. Nine volunteers managed the partial solar eclipse at TWOSE, with about 3000 people out to observe through the 1000 eclipse viewers and glasses we provided.

### Black Nugget Lake Observatory

Furthering our mission for outreach and education, the Centre is building a 32" telescope with accompanying observatory dome and control/warm-up room at a dark-sky location near Edmonton—the Black Nugget Lake Observatory (BNLO). This project involves partnering with Beaver County, which operates the lease on the public lands where the observatory is located. The project has been made possible thanks to former Centre member Bob Drew, who donated the telescope optical components. In addition, the of the University of Alberta's Devon Observatory donated a dome and trailer from





that facility for repurposing at BNLO. Roman Unyk leads an enthusiastic and energetic committee with has the knowledge, skills, and tools to construct the telescope. The Centre has a long-term lease on some land that will house the eventual observatory. Finally, financial support from Edmonton Centre, the RASC Special Projects Program, and Beaver County, as well as pending financial support from other sources, is anticipated to allow completion of the telescope in 2018 and the observatory in 2019.

### Northern Prairie Star Party (NPSP)

The 14th annual Northern Prairie Star Party (September 19 – 24) at Black Nugget Lake campground attracted a record attendance of 72, with 28 newcomers. An enthusiastic crowd came out for the Saturday talks, with talks by Dr. Erik Rosolowsky of the University of Alberta (Neighbouring Spiral Galaxies), seven Centre members (2017 Total Solar Eclipse), and Dr. Peter Brown of Western University (History of Meteorite Falls in Canada and their Detection).

Over 20 volunteers helped with this event. We distributed more than 30 door prizes, including those donated by All Star Telescope and club members. The camaraderie was evident at our Saturday BBQ and gathering for the largest group photo in our history.

### Jasper Dark Sky Festival

Last year marked the 7th annual partnership with Tourism Jasper for the Jasper Dark Sky Festival. Since 2011, when Jasper was designated as a Dark-Sky Preserve, Edmonton Centre has been spearheading three of the festival's major events: Beyond the Stars at Lake Annette, Observe the Sun with the RASC, and Star Gazing in Jasper.

This year, festival goers were treated to constellation edification under some of the most pristine dark skies in the world during our Friday night Lake Annette event. Even though the solar disk was quiet, our telescopes and knowledge engaged the crowd for several hours during a clear Saturday afternoon. Unfortunately, inclement weather clouded out the evening star-gazing event. In all, an estimated 1000 festival goers attended, with one lucky participant receiving a raffled Celestron "First Telescope."

**Kent Martens**  
*Secretary*

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 Centre volunteers 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.

Monthly meetings at SMU are on the third Friday of each month, except for July and August. The Executive meet prior to the main meeting. The Centre's library cart is available to members at each meeting.

We continued hosting speakers with interesting and informative presentations. Meeting attendance ranges from 30 into the 60s, depending on weather. We noted an increase in the number of females and guests attending meetings. Presentations included:

- January 20 Kirsten Bonson: new frontiers on astrophysics from supermassive black holes to science education.
- February 17 Tony Schellinck: how to inspire people to observe the night sky—observing with binoculars.
- March 17 Dave Chapman—how to orient your Sky-Watcher telescope. Paul Heath explained astronomical concepts using simple methods.
- April 21 Ruining Zhang: invited to China, she made a presentation based on her experiences: Computational Cosmology – the bridge between theoretical and observational research on cosmos evolution. Laura Mclarnon spoke about space medicine.
- May 12 Randall Rosenfeld: The Music of the Spheres: Astronomers as Musicians & Musicians as Astronomers.
- September 15 Several members gave accounts of summer events and travels.
  - Paul Heath recapped Eclipse 2017 coverage by Centre members.
  - Judy Black outlined the Nova East Star Party.
  - Dave Chapman and Halley Davies presented the premiere of the Centre's video on how to use a Star Finder.
  - Judy & Jerry Black presented a light-hearted dialogue of their shared but separate experiences.
  - Dave Lane provided an overview of the cloud cover over Nebraska and surrounding area.
  - Dave Chapman showed the video of his group's reaction to the eclipse.
  - Martin Hellmich & Halley Davies drove away from the forest fires to clear skies on someone's front yard.
  - Paul Gray presented a video of his family's eclipse experiences.
- The evening closed with Alan Dyer's video "Totality Over the Tetons."
- October 21 SMU sponsored the Dan McLennan Memorial Lecture; Sara Seager presented on Exoplanets and the Search for Habitable Worlds.
- November 17 Youth members' presentations. Ruining Zhang on her experiences at Summer Science Program—or-



biting mapping of a near-Earth asteroid using the 14" telescope in Socorro, New Mexico. Siblings Kathryn and Nathan Gray presented the fun and learning acquired at Starmus IV.

Annual Members' BBQ was June 16 in St. Croix Observatory. Twenty-five members enjoyed the BBQ and camaraderie—clouded out!

The Centre Objectives and Bylaw #1 were approved in February.

The Centre's dark-sky observing site, approximately 40 minutes from Halifax, the St. Croix Observatory (SCO) has a roll-off roof, warm room, washroom facilities, and a 16" Sky-Watcher Dobsonian. Regular observing nights occur each month, weather permitting.

Tony Schellinck continued in his role as Nova Notes Editor, producing 5 editions in 2017. Regular contributors are: Dave Chapman, Art Cole, Paul Heath, Jim Millar, Matt Payne, Chris Young, and Tony Schellinck, plus special articles by: Pat Kelly, Judy Black, Melody Hamilton, Blair MacDonald, Roy Bishop, Wayne Mansfield, John Read, Gillian Webster, Michael Boschat, and David Lane. Front page photos by: Art Cole, Karl Hudson, Blair MacDonald, and David Chapman.

Tony Schellinck is stepping down and Charles White is the new *Nova Notes* Editor.

Halifax participated in: Library talks, school and park presentations, youth-group talks, outreach events, Keji Dark-Sky events, Nova East, Saltscapes, APS sidewalk astronomy, and introductory astronomy classes, as well as venues with BGO and Planetarium talks. We celebrated over 5,200 Galileo moments in 2017!

## Outreach

Outreach activities in 2017 included:

Halifax Planetarium: Quinn Smith, Chris Young, Pat Kelly and Tony Schellinck presented 27 shows to almost 650 people.

Classroom and library talks continued through the work of Paul Heath; he also held a 6-part astronomy course for THRIVE Education.

Melody and Bruce Hamilton led an event for Glooscap First Nations, Acadia Night of Light, as well as Spring Solstice at Fort Anne and the 2017 Solar Eclipse at Annapolis Royal.

Tony Schellinck continued his DSO with binoculars, the indoor theatre program at the Astor Theatre in Liverpool, along with his bino table at major outreach events. He is also teaching an intro astronomy class for SCANS, helping with Privateers Days in Liverpool, HalCon, library talks, Keji Dark Sky weekends, Keji Seaside, White Point Lodge, a Boxing Rock event, Nova East and the Halifax Planetarium. Another busy year for Tony. Wayne Mansfield also helped with events at the Liverpool theatre and waterfront and Keji dark sky.

We had astronomy booths at Saltscapes and Hal-Con (Atlantic Canada's sci-fi and gaming convention).

## Nova East

This year's Nova East, Atlantic Canada's regional star party at Smileys Prov. Park, was again a success. Patrick Kelly presented an entertaining and informative presentation on The Natural Satellites of Jupiter. Other speakers included Tony Schellinck, Kathy Walker, Dave Chapman, Andrea Misner, and Matt Paine. Jerry Black won the astrophotography contest for his night-sky photo taken at Turret Arch in Arches National Park, Utah.

The Centre supported Kejimikujik National Park and Historic Site. Dave Chapman helped facilitate two Dark-Sky Weekends, with presentations, talks, and observing sessions.

## Certificates Awarded

Observing certificates were awarded to:

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

Astroimaging Certificates were awarded to the following: Kudos to Tony Schellinck for being the only member to complete all three astroimaging certificates.

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

The Qilak Award was presented to Paul Heath, our Outreach Chair, at the Ottawa GA in July.

Halifax is committed to carry on many of the public outreach programs provided in 2017, plus we will continue improving our By-Laws.

## Judy Black

*Secretary*

# HAMILTON CENTRE

Hamilton Centre holds public meetings the first Thursday of each month (except for July and August) at the Royal Canadian Legion in Waterdown, Ontario. The guest speaker & topic or main activity for each month is summarized in the list below:

January	Dr. Paul Delaney, York U. "Understanding Our Home: The Milky Way Galaxy"
February	Dr. Chris Talpas, Club Member "Radio Astronomy"
March	Dr. Niayesh Afshordi, University of Waterloo. "What Banged and Why? The greatest detective story of all time!"
April	Gary Colwell & Gary Bennett, Club Members "A Pigment of your Imagination: Are those Photos Fake?" Martin Palenik, Club Member "Astrophotography: Compact Computing"
May	Dr. Parshati Patel, Western U. "The Tale of Disks around Massive Stars"
June	Michael S.F. Watson, "Viewing and photographing Solar eclipses"—which was great preparation for the August solar eclipse.
September	Dr. Bryan Gaensler, U. of Toronto. "How the Cosmos will Kill You"





Literally hundreds of passersby had the opportunity to look through one of several telescopes and sets of binoculars. We gave out copies of *SkyNews* as well as solar viewers for the August eclipse

- Solar Eclipse, August 21, Spencer Smith Park, Burlington: Bob Prociuk had many individuals look at the partial eclipse

The Hamilton Centre successfully hosted the 2nd Annual Canadian Astrophotography School (CAPS) on May 6th and 7th in the nearby town of Milton. This event was conceived and organized by Andy Blanchard and consisted of three courses covering Introductory Astrophotography (Richard S. Wright), Planetary Photography (Jim Chung), and PixInsight (Ron Brecher).

The Centre also produces its monthly newsletter *Orbit* thanks to the dedicated efforts of its long-time editor Roger Hill. Our Centre is fortunate to have an observatory equipped with a 16" RC scope and a 14" Celestron Edge SCT. The property does not take care of itself, but thanks to many volunteers over two Saturdays, a tree cull (with appropriate permits) was performed at the observatory to restore sight lines. A tasty BBQ accompanied the hard work, which was fun for all!

A lively astrophotography email group composed of members from Hamilton as well as Toronto Centre exists providing encouragement, advice, and camaraderie. On those rare nights when we actually have clear skies, members' inboxes are abuzz with a virtual star party occurring.

Roger Hill, Martin Palenik, and Mark Smith mounted a very successful expedition to nearby Georgetown to witness the Aldebaran Grazing Occultation on March 4th.

Some notable awards and achievements for members this past year include:

- Outreach Youth Award for 2016: Oliver Mao, St. Andrew Elementary, Oakville
- RASC Certificate Program: Wide-Field Astroimaging Certificate to Scott Barrie

**Chris Talpas**  
*Secretary*

- October Eclipse Stories by several members plus our annual elections for the Board Of Directors
- November Dr. Chris Talpas (club member). "Is there anyone out there? Thoughts on the likelihood of finding technological alien life."
- December Thanassis Psaltis, a graduate student at McMaster U. "Rust and stardust: The lives of the stars and the origin of the elements". Special Guest in Attendance: Dr. Dick Berg (NY)

Thanks to the efforts of a number of dedicated individuals, the Hamilton Centre carried on an active Outreach Program in our community and the surrounding areas. These events and activities are summarized below, including attendance figures.

- March 31 The 1st St. George Pathfinders (20 Girl Guides) in St. George
- April 21 Canadian Martyrs School, Burlington, Grade 7/8 class (25 students)
- April 24 Cubs and Beavers from Dundas at the Observatory (20)
- August 30 St. George Library: Astro Talk, slide show and observing session (20)
- September 26 L3 WESCAM, Burlington: our first corporate outreach session (70)
- October 27 Westfield Heritage Village (250)
- November 28 Pearson HS, Burlington (50): Daytime lessons and evening observing
- December 15 Stephen Lewis HS, Mississauga (150)

In addition to these outreach events, the Centre also hosted a number of special outreach events associated with the National Star Party in July and solar eclipse in August:

- National Star Party, July 29, Spencer Smith Park, Burlington: Began at 6 p.m. with views of the Sun, and when dark, moved on to the Moon, Jupiter, and Saturn, among other objects.







# KINGSTON

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CENTRE

President Rick Wagner welcomed the members and guests to the January meeting. Rick also talked on astrometry and gave several links to many websites and programs that can be used. Member Bruce Elliot, who recently retired, said he took Dr. Dave Hanes Astronomy 101 and enjoyed it. Bruce then showed us his images of the Moon, Venus, and Mars. Bruce is using a DSLR Camera on a tripod.

February had members and guests treated to a viewing of the BBC Sky at Night Episode 1. Member Stephen Craig talked on his observatory and how he is imaging. His goal is to image all the Messier and Caldwell objects.

In March we had Ottawa member and LPAC Chair Rob Dick giving a talk on Light Pollution and Scotobiology. The topic covered the advancement in lighting and its effects on the environment.

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.

This month also held the Frontenac, Lennox & Addington Science Fair on March 30 and 31. Member Dr. Bruce Elliot and Rick Wagner

helped to judge the event. The winner of the Leo Enright Award for Astronomy was Joshua Dove of Kingston Christian School. He won with his project called “Galactic Jell-O — A model of gravitational waves.” Joshua used Jell-O and marbles to mimic the production of waves as they travel through space. Joshua received a copy of the Leo Enright edition of the Beginner’s Observing Guide and \$100.00 cash. He also received a special mention in the Intermediate category.

We had many interesting talks in May from members ranging from camera and tripod setups for astroimaging, to a talk on the Barringer Meteor Crater in Arizona. Brian Hunter gave a talk on satellites, while Leslie Roberts observed and imaged the Virgo Ghosts that were in April’s Edition of *Sky & Telescope*. Ontario Telescope donated a copy of *Explore the Universe* written by past member Brenda Shaw. This was presented to our youth member Devon Graham Ancsin.

June’s meeting had us discussing up-coming star parties, Star Fest, and Fall ‘N’ Stars. Rick Wagner gave us a list of objects from Jupiter moon shadows, Mercury, and Venus for early morning observing. Members also presented several astro images of planetary, comet, planetary nebula taken from Minkowski’s Catalogue and solar observations.

July and August were the summer shut down of the Centre. Some members from attended the total solar eclipse in August. Locations ranged from Wyoming, Kentucky, Nebraska, and Kingston, Ontario.





There were members from the Centre along with Queen's University and Royal Military College set up at Confederation Basin. All solar eclipse glasses were handed out and there was estimation of around 300+ people showing up. Newburgh also had about 75 people show up to enjoy the partial eclipse. The clouds held off and those who travelled far or who were local observed a very spectacular event of our Sun and Moon.

September's meeting was all about the solar eclipse and what people observed during the eclipse in their locations. We also held Fall 'N' Stars in Thomasburg, Ontario, with the Belleville Centre. We had 30 people in attendance on Sept 22-24, the hottest days of September with daytime temperatures reaching 33 °C. There were two nights of clear weather, a lot of dew falling throughout the nights, and great talks on Saturday afternoon. Thanks for all the door prize donations and awards. Everyone had a great time.

October had the Centre's members and guests learning how imaging over the years from different cameras and telescope setups, along with processing images, has been a steep learning curve. As they say practice, practice, practice. Every observing session is a lesson learned. We were treated with a talk on the well-researched purchase of a telescope (Takahashi 7.4 FC-100D). The telescope needed to be easy to set up and to use. That is the best telescope there is—one that is used.

November was the Kingston Centre's Annual Meeting. We also had three positions up for election—President, Vice-President, and Treasurer. After the elections and Annual Meeting, we had talks from our members.

December saw the Centre members going to the Mandarin Restaurant for the Christmas Banquet.

We helped Queen's University with the Kingston Astronomy Outreach Network (KAON) sessions 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.

Throughout the year Queen's held various talks for the faculty and students through the physics department, which Centre members could attend.

Next year we will be moving to a new room, Ellis 319, while Room 324 gets renovated.

Respectfully Submitted

**Kim Hay**  
*Secretary*

## Meetings

January 13	General Meeting: What Banged and Why? The greatest detective story of all time!—Dr. Niayesh Afshordi
January 27	101 Meeting Box-Opening my new 12" Meade Lightbridge—Rhett Mackend The Joy Of Amateur Telescope Making—Peter Pekurar
February 10	General Meeting 2017 Eclipse chasing and the 2017 solar eclipse in America—Jeff Collinson
February 24	101 Meeting Intramercorial Planet Vulcan—Clark Muir Great American Eclipse—Jeff Collinson
March 10	General Meeting Annual photo contest judging—Steve Holmes
March 24	101 Meeting Aldebaran Graze video—Clark Muir The Search for Extra-Terrestrial Civilizations.... Improving the odds of detection—Steve Holmes My Astronomy Adventure: The first 20 Years—Ron Brecher
April 21	General Meeting The science of Einstein—Dave Garner
April 28	101 Meeting Live Demonstration of the Lisa Lynn Bissett Memorial Observatory online capabilities—Gerry Bissett The Martian Dichotomy—Gerry Bissett
May 12	General Meeting Hydrogen Alpha Imaging—Serge Theberge
May 26	101 meeting It Was Like Having A Time Machine? A Personal Journey in Amateur Astronomy with Simple means—Ellen Papenburg Frugal Astrophotography—Khalid Baheyeldin
June 9	General Meeting A visit to the Arecibo Radio Telescope—Leonard Kuehner



Perimeter Institute: International Summer School for Young Physicists arriving at club observing site.



Conestogo Lake summer star party

- June 16 101 Meeting  
Meteorite Specimens–Brian Hollander  
Planetary, Solar Images–Darryl Archer
- September 8 General Meeting  
Several members shared their experiences and images of the “Great American Eclipse” from August 21
- September 29 101 Meeting  
HI SEAS Participant–Martha Lenio  
Eclipse Images–Various members
- October 13 General Meeting  
Dark Matter–Dr. Niayesh Afshordi
- October 21 101 Meeting  
RASC road trip to New Mexico and Arizona astronomical sights–George Pucula  
The Carrington Event–Steve Holmes
- November 10 General Meeting  
Annual General Meeting; Elections and new Board members announced.  
The new Board is as follows
- President Leonard Kuehner
  - 1st VP Serge Mammoliti
  - 2nd VP Gerry Bissett
  - Treasurer Jeff Dawkins
  - Secretary Clark Muir
  - National Rep. Dave Garner
- WIMPS at Sanford Lab in Lead, Wyoming–Jim Goetz
- November 24 101 Meeting  
Walking Thru the Universe - Winter Edition–Karol Socander  
Galileo Museum in Florence–Jim Goetz
- December 8 General Meeting  
2017 RASC GA report–Rhett Mackend  
The 1833 Leonids from Canada–Clark Muir
- December 22 101 Meeting  
Latest Images from members  
A Humorous View of the Flat Earth–Brian Hollander

#### Awards

- RASC President’s Award–Dave Garner
- Kitchener-Waterloo Raymond Koenig Award–Gerry Bissett

#### Activities

Throughout the year the Kitchener-Waterloo Centre ran or participated in 17 public events and star parties, including:

The July and August 101 meetings were held at Conestogo Lake campground. Members, campers, and visitors from the city were treated to darker skies and several telescopes for viewing.

For the fifth year, the club hosted the Perimeter Institute’s “International Summer School for Young Physicists” (ISSYP). This event showcases the night sky to 40 motivated international high-school-aged physics students.

The club provided observers with telescopes for the University of Waterloo’s Partial Solar Eclipse event and the Annual Perseid Meteor Shower star party.

Other star parties were held in Millbank, Waterloo, Guelph, Ayr, Kitchener, and Paradise Lake.

The club’s weekend Equinox Star Party was held in Bayfield with 40 people attending.

The Guelph Rotary Club’s 2020 Centennial Project includes the building of an astronomical observatory. Kitchener-Waterloo is providing technical advice.

At least 28 Centre members made the trip to the path of totality for the August 21 eclipse. Several locations were chosen all across the United States.

**Clark Muir**  
*Secretary*

2017 was a good year and could be called the year of change and rest after hosting the 2016 General Assembly.

The year started off with a change of venue from Fanshawe College for our monthly meeting on January 20 at the Hume Cronyn Memorial Observatory on Western University Campus. Peter Jedicke spoke on the history of the Centre's relationship with the university and Cronyn Observatory. Dr. Chris Smeenk spoke on "Einstein's Path to a New Theory."

London meets on the third Friday of every month (excluding August)

- February 17 David Levy talked on Notes and Views of the Night Sky.
- March 17 Arthur Oslach talked about Video Astronomy and the equipment he uses.
- April 21 Bill Gardner talked on his activities at Killarney Provincial Park and Mike Hanes talked on Astronomy in Tucson, Arizona.
- May 19 Dr. David L. Clark talked on his research on Meteorite Orbits.
- June 16 This was a member's meeting with a live video feed with Chris Gainor on the Saturn V Rocket Construction and Program.
- July 21 A pre-eclipse meeting with several Centre members sharing their past experiences on solar eclipses and how to observe and photograph them.
- August Several members travelled to the eclipse center-line to watch totality; they were scattered along the path between Wyoming and Tennessee. The largest contingent of RASC members was at Grand Island KOA in Nebraska. Clouds got in the way, and people changed locations at the last minute to get a view of the eclipse. Many Centre members stayed home to enjoy the partial eclipse, and several members shared their telescopes at Western University's public event, where well over 5,000 people came to watch—one of London Centre successes.
- September 15 Robert Cockcroft talked about the Cassini Mission around Saturn, which ended that day.
- October 20 Kate Helsen talked on Music in the History of Astronomy.
- November 17 Dr. Mark Gorski spoke about the Very Large Array (VLA) in Socorro, New Mexico. Elections were held. President Rick Saunders stepped down after six years of service and Mike Hanes was elected as Centre President. Mike has been a Centre member since 1995.
- December 15 Dr. Robert Weryk talked about his discovery of the minor planet 'Oumuamua. Dr. Weryk was raised in London.

### 2017 General Assembly (Ottawa)

London was well represented at the Ottawa GA with nine members attending

### Banquet

November 6 was the London Centre Banquet. The pre-banquet festivities started with Elizabeth Laird lecture at Western University. Dr. Megan Urry, Founding Director of the Yale Center for Astronomy and Astrophysics, whose research focused on active galaxies and supermassive black holes—her lecture topic. The banquet followed at Brescia College, with 1st Vice-President Dr. Chris Gainor speaking about the "History of the Hubble Space Telescope." Dr. Gainor is currently writing a definitive Hubble History. Society President Colin Haig also was present.

### Observatories

Fingal Observatory 2 was shut down for several months due to repairs on the telescope. The project started mid-July to clean haze off the corrector plate. The telescope was to be shipped to Celestron, but due to a variety of issues, the scope took a circuitous trip and arrived in California on October 13—several months after leaving London. Celestron technicians were quite efficient in cleaning the haze and in fixing the damage caused when the scope was accidentally dropped by two adventurous Centre members. The unit was shipped back, arriving on November 3, and the C-14 was as good as new.

### Membership

London Centre has 102 Regular, 11 Youth, and 9 Life Members, totalling 122 members.

### Member of the Year

Our Member of the Year was Dale Armstrong, Observing Chair. He facilitated the repairs and brokerage paperwork for the C-14 telescope. Dale gave several talks at monthly meetings on what to look at in the Night Sky.

### Public Outreach

London Centre continued its long tradition of public outreach, with these events:

- Banting Secondary School February 27 (45 students)
- Talk on Mars at the Ilderton Library on April 27
- Strathroy on April 28, a talk on Doomsday on Jupiter-Comet SL9
- Girl Guides on April 29 for their Astronomy Badge
- Girl Guides on May 26 at Camp Silvan
- Girl Guides on June 9 at Park Hill
- Sidewalk astronomy at the St. Thomas Elevated Park
- Fanshawe Park star party on July 5 and August 16

### Cronyn Observatory, January 9 to December 6

The Centre had a busy year of public outreach, maintaining an active presence at Hume Cronyn Observatory. In all, 26 members took part in one or more of 101 outreach events, involving 12,190 visitors. The events included Exploring the Stars, Public Nights, Special Events, the August 21 Solar Eclipse and Astronomy 1021 Projects.

### Mike Hanes

*President*



The Mississauga Centre had a busy year in 2017. Meetings are held on Fridays at the University of Toronto at Mississauga (UTM) thanks to the generous sponsorship of Dr. John Percy and Dr. Ulrich Krull. On Speaker Nights, an expert in astronomy or a related topic gives a presentation. On Potpourri Nights, Centre members can give shorter presentations on astronomy-associated subjects, a benefit of membership.

Eight Speaker Nights were as follows:

Feb. 24	Dr. Marianne Mader: ANSMET: Hunting Meteorites at the End of the World (Antarctic Search for Meteorites)
March 24	Dr. Jennifer West, postdoc fellow: Nature's Supercollider: Supernova Remnants and How They are Connected to Our Galaxy
April 21	Randy Attwood and Michael Watson: Observing and Photographing the August Total Solar Eclipse
May 26	Paul Delaney: Exoplanet Update: Proxima Centauri b
June 23	Professor Michael De Robertis: Life Beyond Earth
Sept. 22	Catherine Woodford: The Discovery of Gravitational Waves
Oct. 27:	Randy Attwood: Voyager at 40
Nov. 24	Dr. Tanya Harrison: The Past and Present State of Water on Mars

During the 12 Potpourri Nights of 2017, 30 members (and guests) spoke on various topics. Members have been anticipating the solar eclipse on August 21 for years and gave numerous talks prior to the eclipse about safe methods of observing, equipment to use, and locations where members were going to the path of totality in the United States, or to observe the partial eclipse in Mississauga. After the eclipse, 20 members gave talks on their eclipse experiences all the way from Oregon to South Carolina, as well as a report on the very busy event for the partial eclipse at Riverwood. There were talks about star parties and gatherings, namely the GA in Ottawa coinciding with Canada Day 150 celebrations, Starfest, and the National Star Party at Riverwood. Members spoke about their observation of the grazing occultation of Aldebaran on March 4. There were six "The Sky This Month" presentations and a talk about Providing Educational Services in Space Science. Members gave talks about their astronomical travels, such as Meteor Crater and Lowell Observatory in Arizona, Spacefest VIII in Tucson, The Royal Eise Eisinga Planetarium in Franeker, the Netherlands, the Jasper Dark Sky Festival Oct 13 to 22, and Colorado Museums. There were talks about exoplanets, Sputnik at 60, and monitoring solar flares and Jupiter by radio. Equipment and talks were about astrophotography, a power adapter for a Meade R.A. motor controller, solar eclipse filters, and equipment including a Sun funnel, astrophotography cameras, thin meniscus mirrors, refractor restoration, and the program Deep Sky Stacker. There were also talks about the RASC certificate program, public outreach using Mallincam video, as well as an astronomy trivia quiz.

At the annual meeting in February, the winners of the astrophotography contest were announced, and the Centre awarded prizes. Dave Dev won for Deep Sky Guided and Lunar; Brian Gibson for Nightscape and Deep Sky unguided; and Shakeel Anwar for Planetary and Special Astronomical Events.

During the April 7 meeting, the annual auction was held under the organization of auctioneer Simon Cloughton, where members sold astronomical items to benefit the Centre.

The annual picnic and barbeque was held on June 17; 26 attendees braved a thunderstorm to attend. Despite this, there was a good opportunity to use the LUNT solar scope. At the BBQ, the Centre Award was presented to Simon Cloughton. At subsequent meetings, the Public Outreach and Education Award was presented to Allan Connery, and the Special Projects Award to Steve Mallia. On another occasion, an "Explore the Universe" book and ball cap were presented to Stephen Mitchell as a young deserving member of the Centre.

The main venue for public observing for the Mississauga Centre, in co-operation with the Earthshine organization, is the Riverwood Conservancy. Six Riverwood events took place, and only two weather-related cancellations

On July 29, as part of the Canada-wide National Star Party, the Centre hosted 750 attendees who observed Saturn, the Moon, deep-sky objects, and a pass of the International Space Station. Members brought 16 telescopes. The Centre's new signage and a megaphone helped with running the event. On August 21, about 2800 members of the public attended an event to view the partial eclipse, setting a new attendance record.

Centre volunteers also ran Scout Camp events in July, August, and October, as well as a school group in Marie Curtis Park.

Several members observed the grazing occultation of Aldebaran on March 4. For the long-anticipated solar eclipse on August 21, many members travelled to most of the states in the path of totality. A special Yahoo group organized by John Marchese and Jose Alonso travelled to Nebraska.

The Centre always has a good attendance at Starfest, and this year, the star party was held a month early, in July, so as not to conflict with the solar eclipse. Thirteen Mississauga Centre members attended. A number of members also travelled to the special Ottawa GA for the 150th anniversary of Canada.

To increase readership of *SkyNews* and promote the RASC, the Centre purchased copies of *SkyNews* for free handouts to non-members at meetings. Informed by social media groups, many non-members attended meetings, especially Speaker nights. Steve Mallia conducted a questionnaire of the membership in order to come up with a strategic plan for the next few years. Members were pleased with the direction of the Club, and many wished for more Speaker Nights, a dark site for observing, and help with achieving certificates.

The Centre has acquired telescopes and other equipment over the years, available for lending to the membership. This collection was enhanced by the generous donation of an equatorial-mount telescope and accessories by Donald Funston.

Betty Robinson produced six issues of *Messenger* on-line to keep members up-to-date on happenings and for archiving Centre activities.

Again in 2017, the Mississauga Centre sponsored the Mississauga Clear Sky Chart.

**Chris Malicki**  
*Secretary*



Once again, terrible weather wreaked havoc on our observing nights. Out of 34 planned member's observing nights, only 9 were a go. We named the clouds over the city "The Montreal Nebula"!

2017 showed a definite growth in our membership. At the end of 2015 we had 130 members, and by the end of 2017, we had grown to a record-breaking 141 strong.

Our Centre has had a long-term relationship with John Abbott College (JAC), and for many years the Centre has had space supplied for their library and held public presentations there. In 2017, a new agreement was reached that is truly a win-win for both parties. Working with the Physics Department and the professor and having the students actively involved is like breath of fresh air in the Centre.

A couple of Information Library Technology students volunteered to catalogue our library collection, stored at the JAC.

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" Meade

Cassegrain telescope. Members also bring their own telescopes. We had 22 Clubhouse Meetings through 2017.

On the first Thursday of the month, the Centre holds a member's library night to borrow and return books, talk with other members, show & tell, etc. Sometimes there is a short presentation. 2017 had eight library nights.

Montreal Centre allocated 15 evenings, spread over the calendar year, for member's observing nights to allow them to observe in darker skies. We were able to enjoy 9 of the 15 planned dark-sky events.

Public outreach is a strong focal point for the Montreal Centre. We integrated most of the member's events with public events, and we have public observing after the talk, weather permitting.

Our scheduled Centre Public Outreach Events were from March through to December, with events and speakers as follows:

- Gary Smith "Introduction to Astronomy."
- City of Westmount Earth Hour—about 250 attendees
- Carl Jorgensen "Introduction to Astronomy (part 1)."
- Kevin Kemball "How Dark is Dark?"
- Kevin Kemball "When You Visit the Neighbourhood."
- Carl Jorgensen "Introduction to Astronomy (part 2)."
- National Star Party—Kevin Kemball "Where are you Looking?"
- Perseid Meteor Shower—David Schuman on The Perseid Meteor Shower. Unfortunately, no meteors were observed because of "The Montreal Nebula."
- Partial solar eclipse in collaboration with John Abbot College on the JAC campus.
- Prof. Karim Jaffer, from John Abbot College, on "The Moon."
- The Starlight Foundation, who presented six cancer patients a certificate with a star named after each of them—a well-attended event. All were treated to the night skies through our Bellevue Observatory and members' telescopes.
- International Astronomy Day. Centre members set up 7 telescopes and about 200 people viewed the night sky.
- Townsend Lecture featuring David Levy. Montreal-born and long-time Centre member, as well as Honorary President, Dr. David Levy spoke to about 85 attendees about his personal experiences observing both lunar and solar eclipses. David's speech was passionate & inspirational, as usual.
- "Halloween Under the Stars - Spooky Nights." Following a Spooky & Starry Scavenger Hunt, Kevin Kemball described some features on our Moon and some deep-sky objects with spooky names.
- Patrice Scattolin from the Centre francophone de Montréal: "Space Exploration from the Ground Up: Reality and Fiction: A Personal Voyage."







- The Geminid Meteor Shower—Kevin Kemball gave a short talk “Where is my Steel Umbrella?” After the talk, many were treated to a display of hundreds of meteors.
- The Annual Holiday Dinner—a time of celebration & fellowship for 35–40 members.
- The Centre’s Annual General Meeting

A total of 100 events for members or the public were planned for 2017, but 35 were cancelled due to bad weather.

**Carl Jorgensen**  
*Secretary*



Six RASC members who travelled to Madras, Oregon, to view the total solar eclipse



Patrice (r.) receiving a certificate from Centre President Morrie Portnoff for his presentation



Townsend Lecture featuring David Levy



Montreal Centre’s Double Star Program Bronze Certificates earners, L to R: Secretary Carl Jorgensen, President Morrie Portnoff, Honorary President David Levy—David Levy & Carl Jorgensen received the first two





Bellevue Observatory: Maintenance done during 2017. Before—During—After  
 Photos by Alex Stefanescu, Observatory Director.

CENTRE FRANCOPHONE  
 DE  
**MONTRÉAL**

No report submitted.

**NEW BRUNSWICK**  
 CENTRE

At the end of 2017 the NB Centre membership stood at 109, an increase of 16 over the year. There were 22 new members and 6 people did not renew.

We reduced the number of Centre meetings in the year on a trial basis to determine whether it would improve attendance, with venues rotating among Fredericton, Moncton, and Saint John. Five meetings were held and the mean attendance was 24 (range 18 – 28), the same mean attendance as in 2016.

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:

- Emission Line Survey of the Milky Way by New Brunswick Centre member and NASA retiree Dr. Ted Gull, using slides from the 1990s of Hubble photos
- Curiosity's Travels by Dr. Lucy Thompson of the UNB Planetary and Space Sciences Centre.

Member-presentation topics included Tycho Brahe, the Kepler Museum and Prague Astronomical Clock, Trappist-1 exoplanets, a history of astrolabes, the iOptron SkyTracker, a show and tell of antique astronomy books, and a delightful astronomy quiz.

Public outreach is a focal point of Centre activities and in 2017 we reported 248 events that involved 18,453 people. In addition, 2438 Star Finders, 2393 Moon Gazer's Guides, and 340 Getting Started in Astronomy guides were distributed. The number of people includes a total of 7533 who viewed live feeds of the Moon and planets through Chris Curwin's telescope via Facebook, over 8 sessions during the year. Tens of thousands of others subsequently viewed posted recordings of these sessions.

Approximately 45% of the events were night or day observing, 28% were visits to schools or youth groups, 24% were presentations to various groups, and 3% were STEM-related exhibitions and observatory tours. The events involved at least 1944 volunteer hours by Centre members. Among the events were presentations and observing at five provincial or federal parks, including our three Dark-Sky Preserves, our Urban Star Park, and seven other municipal parks. The first National Star Party on the weekend of July 29 was celebrated with observing sessions at Mactaquac Provincial Park



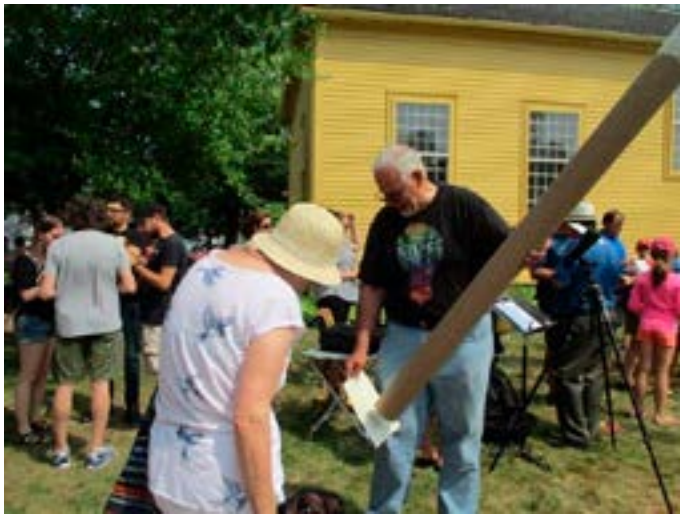
near Fredericton, Moncton High School Observatory, and the Irving Nature Park in Saint John.

The largest outreach event for the year was observing the partial solar eclipse, where approximately 1750 people were treated to safe views in ten locations. Centre members participated in media interviews for newspapers, radio, and television before, during, or after the event.

Four Centre business meetings and the Annual Meeting were held in the year to conduct Centre business. Following the resignations of two Council members, Emma MacPhee was named as Treasurer and Gerry Allain as a Councillor. An LCD projector was purchased as a resource for outreach presentations.

In addition to the four quarterly editions of the Centre newsletter, *Horizon*, a special edition was produced to capture memories of solar eclipse activities from members who observed in the province and in the path of totality.

**Curt Nason**  
*Secretary*



## NIAGARA CENTRE

The Niagara Centre had a good year in 2017, filled with observing, public events, regular meetings and get-togethers.

Our membership grew significantly this year, going from the low 80s to the high 90s. After a few years of slow but steady increases,



we saw a big jump in our numbers, including several teenagers and pre-teens who are regular attendees at our meeting and star nights. We are always happy to see new faces at our meetings.

Our club produced its third calendar, with all the photos taken by our own members. We printed 50 and sold most of them quite easily. We were very happy with the quality of submissions and the resulting calendar. Many members bought multiple copies and gave them 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. Even when our public star nights are completely cloudy, members of the public who turn up can still hear the talk, meet club members, and see telescopes in person.

Our most commonly used locations are Heartland Forest, a handicap-accessible park and conservation area in Niagara Falls, Firemen's Park in Niagara Falls, 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 participated in the National Star Party in July, with a public event at Chippawa Creek Conservation Area. It was one of our better attended star nights of the year, with about 80 people.

A dozen members travelled to seven different states to view the total eclipse of the Sun. Remarkably, all were successful.

Our public event for the solar eclipse had over 400 people turn up to a softball field in St. Catharines for 73% coverage of the sun. The solar eclipse glasses we ordered were snapped up very quickly.

Totality will pass over Niagara in April 2024. We are already considering options, as we will be one of the few RASC Centres to experience totality. The crowds could be enormous.

Brian Pihack and Stan Sammy were awarded the Service Award for their years of work in public outreach. Because they could not attend the National meeting in Ottawa, Colin Haig presented their awards at our October general meeting.

Club members travelled to star parties in Ontario and Pennsylvania. Turnout for Starfest was lower than normal, due to the eclipse. The Black Forest Star Party in Pennsylvania in September had the longest stretch of perfect observing weather that anybody could remember.

We participated in the Niagara Science Fair for the first time. We gave an award for the best astronomy project to Daniel Mateus, a high school student, for his research in collaboration with Brock University scientists on erosion in Martian valleys.





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. Although some 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.

### RASC Niagara Guest Speakers 2017

January	Video on the Moon's orbit.
February	Webinar video on solar eclipse photography.
April	Chloe Vanderwal (age 9) "Visiting Kitt Peak Observatory," Andy Blanchard, "Starmus 3 and Canadian Astrophotography School"
May	Video of Janna Levin at Perimeter Institute. "Black Hole Blues and Other Songs From Outer Space"
June	Daniel Mateus, "Sedimentary Layers in Valles Marineris"
September	Juan Miranda and Jeanette Goemans. Total eclipse of 2017.
October	Philip Downey, Colin Haig, Bob Lewis, Michael Panucci. Total Eclipse of 2017. Presentation of Service Awards to Brian Pihack and Stan Sammy by Colin Haig.
November	Mike Dixon, University of Guelph. Growing Food in Space.
December	Kim Tait, Royal Ontario Museum. OSIRIS-Rex mission.

**Philip Downey**  
*Secretary*

## OKANAGAN CENTRE

The Okanagan Centre has continued to have regular meeting across the Southern Interior of British Columbia. The Centre is organized into three meeting groups to accommodate the three major population centres of Vernon, Kelowna, and Penticton. Each group holds monthly meetings and outreach events in their local areas, and assemble together on occasions such as the AGM, the Annual Fundraising Dinner, and many observing events. The Centre operates the Okanagan Observatory, 40 kilometres southeast of Kelowna, near Big White Ski Resort. Our membership in December was 143.

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

Many of the Okanagan Centre members travelled to Oregon and Idaho to experience the Total Solar Eclipse in August. Led by Alan Whitman, or travelling in smaller or family groups, over 50 members were able to experience their first, or an additional, totality.

Vernon Member, John Kerr, continued his work chairing the Centre's Light-Pollution Abatement Committee, including continued consultations with municipal councils.

### Meeting Groups and Outreach Activities

#### Penticton Meeting Group

Monthly meetings are held at the Penticton campus of Okanagan College, from September through June. Speakers have included Tony Willis and Paul Scholz from DRAO, as well as members Mark Force, Dave Gamble, Wendell Shuster, and Dave Whalley.

#### Penticton Outreach

Penticton has enjoyed a very good year with coordinator Al Fishler organizing outreach events: Meadowlark Festival, DRAO Perseids, Tinhorn Creek Winery, and the partial solar eclipse.

Members celebrated both solstices at "Penhenge" on Munson Mountain with public events.

Alan Whitman organized an awesome observation of the March 4 Aldebaran lunar graze from Osoyoos, B.C.

#### Vernon Meeting Group

Monthly meetings are held at the Vernon Science Centre, from September through June, featuring regular presentations from Centre members. The group continued work on the "Analemma Sun Dial" project, which is expected to be completed in 2018 and installed at the Allan Brooks Nature Centre, in Vernon.

#### Vernon Outreach

The Vernon group has been very busy with outreach activities in 2017 with 14 events and over 1000 members of the public in attendance.

A partnership with the Okanagan Science Centre created two Telescope Workshop Demonstrations, as well as a celebration of Astronomy Day on April 28th.

The Vernon group enjoys a successful partnership with the Allan Brooks Nature Centre (ANBC), cooperating on five Family Observing Nights, Solar Observing at their opening and closing events, and observing the Moon with the public at Sparkling Hills Resort.

Vernon members were part of the Optimists Club Unplug And Play With Solar Observing. They were invited by Sparkling Hills Resort and Wells Fargo to show off telescopes. They made astronomy presentations to the Society For Open Learning and Discussion.

Vernon members held a short introduction to Analemma Sundial Project it at the ANBC season closing.

## Kelowna Meeting Group

Monthly meetings are held at the Kelowna campus of Okanagan College, from September through June. Presentations on a variety of topics were given by members.

The Centre's business meetings, including the Annual General Meeting, were held in Kelowna and were attended by members from the other meeting groups.

## Kelowna Outreach

Led by coordinator Colleen O'Hare, the Kelowna group handled 78 outreach events in 2017 with 4500 guests being exposed to astronomy education and observing of the night-sky wonders. This year included the usual array of school events, monthly visits to the Cancer Rotary Lodge, eight large community family events including Canada Day and various Children's Festivals. Also on the agenda were kids' camps/groups, adult groups, and Spring & Fall Wine Festivals, to highlight a few.

For the fourth year now, our members have travelled to Mount Revelstoke National Park to assist the park service with an "Evening Under the Stars." Members gave our "Tour of the Universe" presentation to tourists and park staff, followed by telescope viewing.

The Kelowna group continued the astronomy presentations for Science Literacy Week, collaborating with the Okanagan Regional Library, visiting 12 libraries during the year with over 430 guests.

Each Friday night, weather permitting, the Centre hosts a public night at the Okanagan Observatory, which is usually staffed by the Kelowna members. This season included 14 clear-sky public evenings, hosting 475 guests. Once each month, weather permitting, there is a "Mobility Bus" service that allows wheelchair-bound individuals and those who have difficulty driving at night to visit the Observatory. An articulating telescope eyepiece offers mobility challenged viewers the opportunity to share the same experiences.

A public daytime event to observe the August 21 partial solar eclipse in Kelowna enjoyed overwhelming success, as the public swarmed the site to share eclipse glasses and experience the eclipse safely.

## Okanagan Observatory

The Okanagan Observatory enjoyed a successful season in 2017 with good public attendance at our many open nights. New rows of benches for the public in the Sky Theatre were appreciated and our new public parking system worked extremely well.

An Ecological survey was done on the property as part of the provincial requirements for our application for a new, and larger, license of occupation on crown land. This survey will guide future development of the Okanagan Observatory assets.

## Annual Fundraising Dinner

The sixth annual Okanagan Centre Fundraising Dinner and Member Social, was held on June 10 at the Kelowna Curling Club. Our speaker was Richard Christie, professor of physics and astronomy at Okanagan College. His well-received topic was on one of his passions, Archaeoastronomy.

As is our custom, we also announced the Okanagan Centre's member of the year award, which went to two recipients this year: John Kerr, for his tireless work on light-pollution abatement, and David Hawkins, for his many contributions including chairperson of the Annual Fundraising Dinner and member social for many years.

## Christine Janzen

*Secretary*

This has been a busy year for the Ottawa Centre. The most obvious event was the 2017 General Assembly. Our "Maple GA" was a fine event that drew many compliments. The attendance—242—exceeded our most optimistic expectations. We brought in a modest surplus—while nobody wants a GA to go into the red, they aren't intended as profit-making activities. A great thank-you goes to Brian McCullough who, as GA Chair, provided the drive and vision that made our GA an event to be proud of.

Our outreach efforts have been exceptionally fruitful. Star parties at Carp continue to be popular with the public, and special events such as stargazing for Girl Guides at Camp Woolsey were much appreciated.

The Ottawa Centre is now an affiliate of the Canada Aviation and Space Museum, a relationship that provides us with excellent privileges. In keeping up with our part of the arrangement, we put on several well-attended solar observing events and provided support for International Astronomy Day. However, the August solar eclipse event was our big outreach event for the summer. The Museum's official attendance figure was 5,000 visitors, but unofficial numbers suggest that between 6,000 and 8,000 people came here to observe the eclipse through our members' telescopes.

As most of you know, we have our Fred Lossing Observatory in Mississippi Mills. This year, we've put a great deal of work into FLO. The main telescope has been replaced with the 18-inch Starmaster donated to the club by Mike Wirths. We've made necessary repairs to the clubhouse and the telescope building, improved the observing area for people bringing their own telescopes, and added a much-needed tool shed. We've had some very well-attended stargazing and BBQ evenings at FLO, and I hope this trend will continue. We're planning more improvements, which should help FLO become an attractive benefit to Ottawa Centre members. FLO Co-Directors David Lauzon and Rick Scholes, who fully deserve accolades, co-ordinated the efforts of many Ottawa Centre members, including Attila Danko, Ingrid de Buda, Pat Browne, and Gordon Webster.

Sadly, mortality is a constant in our world, and we have lost friends this year. In September, we lost Paul Boltwood, known for his exceptional pro-am scientific work. Just a few days ago, we lost Eric Kujala, who has dedicated much effort to videographing our meetings. We mourn our missing friends and we will continue to miss them.

As with any vibrant group, the strength of the Ottawa Centre is its membership. With our annual awards, we honour members whose outstanding achievements have been particularly noteworthy. That's no small thing in a group of high-quality people! This year, we are proud to recognize a youth member's accomplishments. Kelly Jordan, our Meeting Chair, deserves kudos for creating this award and correcting a long-standing oversight.

Finally, I'd like to thank the many people who keep this club running. Without your commitment and sustained effort, the Ottawa Centre simply ceases to exist. The Council is the most obvious group, but there are so many more whose fine work often seems to be unnoticed: all of you volunteers who share your knowledge and skills and so generously devote your time and energy to dozens of tasks. We all owe you our gratitude and appreciation. For my part, I consider it a genuine honour to be associated with you.

Clear skies, and all the best for the coming year.

## Tim Cole

*President*

# PRINCE GEORGE

CENTRE

The NOVA (New Observers to Visual Astronomy) course, now in its 14th year, started off the Centre's activities for 2017.

As part of our outreach mandate, Centre members served as judges and award presenters at the Central Interior Science Exhibition. One-year Prince George Centre Youth memberships are awarded to students for their winning entries. "La Station Spatiale Internationale" was the subject detailing "aspects of life that are very different for astronauts: eating, sleeping, clothing, exercising, etc. Astronauts on the ISS perform experiments on the effects of microgravity on humans, plants, animals, etc."

Always popular, the Spring windup barbeque and Christmas potluck were well attended.

Our booth set up at the Canada Day Lheidle T'Enneh park festivities attracted over 900 visitors. Telescopes equipped for solar viewing were a big attraction.

Outreach in remote locations, most notably Williams Lake and Mount Robson Park was facilitated by several Centre members. Activities included lectures and hands-on telescope experience.

Forest-fire smoke throughout B.C. prevented viewing the Perseid meteor shower in August.

A joint effort with Exploration Place and the HR MacMillan Space Centre in July pulled in about 100 people. This event was held at the local museum.

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 and will replace our outdated NOVA course. The new course was evaluated by the students and some changes will be implemented to help improve the course.

Two members travelled to Oregon to view the solar eclipse. Although it was cloudy in Prince George, about 100 people showed up at the observatory.

A Centre member held two photography presentations and workshops. The first one was on astrophotography, and the second one was a hands-on session dealing with the processing of data: Flats, Greys, stacking and stitching, along with "stretching" of the images.

Our Night Sky, a weekly report of interesting objects to view in the night sky continues to be broadcast on a local radio station.

Radio, TV, and newspaper spotlights were broadcast for the Super Moon event.

Our tour group, consisting of several hard-working members, conducted 12 presentations to a total of 311 guests. Groups included public, private, and home-schooled students, Boy Scouts, Girl Guides, Brownies, the YMCA, and forest-fire evacuees. Most presentations were at the observatory but a few were offered off site.

Friday Open Houses are held from February to April, and from August to November. Lecture topics included Delta Scuti Type Stars, Small Worlds of our Solar System, The First Three Minutes, Eclipse Viewing, Full Moon Names and their Origin, Phases of the Moon, Why is Venus so Bright?, The Constellation Orion, How Fast IS the Speed of Light?, The Four Beginnings, Myths of the Spring Constellations, Eclipsing Binaries, Two Earths, Perseid Meteor Shower, Eclipses, and Super Nova.

One of our members attended the Yukon Centre's first ever week-long star party in October and connected with a RASC member from Quebec.

The 0.6-m telescope is being used not only for public open houses but for research involving variable stars.

Fundraising to continue our outreach programs and to keep the observatory operational is always a concern, and we continue looking for sources of income—B.C. Community Gaming Grants go a long way to keep us solvent.

**Glen Harris**  
*Secretary*

# REGINA

CENTRE

Another year of accomplishments and memories have passed. 2017 was a great year for members of the Regina Centre with lots of activities and public outreach. We were blessed by a warm, dry summer so there was plenty of opportunities for observing. We had a couple dozen public events starting in the spring, continuing through the fall with members volunteering to make these events a success.

For International Astronomy Day, Centre members set up telescopes in the parking lot at the Southland Mall in Regina. Indoors, we also set up a mall display of telescopes and materials. We had a great response from the visitors who were also happy to hear of the telescopes in the parking lot for solar observing. The evening skies turned out cloudy so the planned lunar observing in front of the Saskatchewan Science Centre didn't happen.

Surprisingly, the clouds and weather were a deterring factor for quite a few of the outreach events this year. Nevertheless, the ones that we did do were a great success with lots of great comments from visitors. In May, our Centre volunteered to set up telescopes for the Canada-Wide Science Fair where high school students from all over Canada came to Regina to compete. We opened the Kalium Observatory for the students at night and did solar observing during the day. The Science Fair committee and the students were very grateful for our participation. Also of special note was Canada's 150th birthday, and members of the Regina were on hand at the celebrations in front of the Saskatchewan Legislature. Many visitors stopped by to catch a glimpse of sunspots and solar flares in both white light and hydrogen alpha.

Of course, the astronomical highlight of the year was certainly the Total Solar Eclipse on August 21. What a show that was! Members of the Regina Centre participated in a few different ways. Some members headed south to Wyoming to watch the show along the path of totality. Other members set up telescopes in three different locations in Saskatchewan. In Eastend, Saskatchewan, Joan Hodgins led the eclipse viewing where over 100 people enjoyed the eclipse. In Cypress Hills, Mimi Martin had the Cypress Hills Observatory open for the event. Despite clouds during the first phases of the eclipse, the skies cleared during maximum eclipse. In attendance were 437 people. In Regina, Gerry Hodges led the eclipse observing in coordination with the Saskatchewan Science Centre. In total, over 1000 people were on hand at the Science Centre to watch the eclipse. All three eclipse viewing locations were a great success! Members who were in the path of totality brought back some great pictures and amazing stories of the event which they shared with the membership at the September meeting.



Our dark site out of the city was active again this year. Some great astrophotos taken by local members have been published in our local newsletter headed up by Shane Ludtke. Shane and Ross Parker took time this year to scan all the Regina Centre newsletters going back to the first newsletter in October of 1955. The plan is to have these all uploaded to the national website for everyone to enjoy.

A special “thank you” goes out to Ron Haughey and Len McDonald who continue to open the Kalium Observatory to the public a couple times a month. We continue to receive many inquiries from the public about visiting the Kalium Observatory. The volunteers that run the observatory spend many nights a year giving tours to special interest groups and to the Science Centre camp-in events.

The year we had two members receive observing certificates. Pierre Schierle completed his Messier Certificate and was presented his certificate in September. Of special note was the completion of all 138 objects on the Explore the Universe Certificate by Vance Petriew. Vance has observed all of the variable stars, where nobody else has ever observed a single variable star, a comet (Comet Petriew), an asteroid (Vesta with the unaided eye), Pluto (while almost nobody else has ever even reported Uranus), and the gegenschein and zodiacal band, where nobody else has ever reported the zodiacal light, and so on. He was recognized nationally with this remarkable accomplishment and was presented his certificate at the Saskatchewan Summer Star Party in August.

2017 was a great year for the Regina Centre promoting astronomy and the allied sciences. 2018 is going to be another fun-filled year of astronomy and the Regina Centre is looking forward to celebrating the RASC’s 150th anniversary throughout the year. Clear Skies!

**Vance Petriew**  
President



St. John’s Centre continues to have an active year with nine public meetings balanced with two annual star parties, Astronomy Day, Science Literacy at the Mall, public observing sessions (very popular Observe the Moon Nights) and special events (solar eclipse, National Star Party, Parks Canada 150 celebrations). Our internet presence via webpage, Twitter, and Facebook continues a renewed interest in astronomy and enhanced public awareness. A few members continue to advance efforts in astrophotography with tremendous results.

We are working with three groups to establish Dark-Sky Preserves with the hope to have at least one operational within a year or so.

We have been encouraging members to present short talks for topics of interest that aren’t full lectures and have less formality and so are easier for members to prepare and present. We look forward to having more of these in the future.

Our membership year runs from October’s Annual General Meeting through September with no planned public meetings during July and August. We are fortunate to have been donated new telescopes over the past year and these are available for loan to members.

Meeting highlights were:

- October Annual General Meeting and Election of Officers.  
Review of the year’s meetings and events.  
Presentation of RASC Observing certificates.  
Recent member astrophotography efforts, including rare (for us) aurora.

- November Lecture—Black Holes, Dr. Ivan Booth of Memorial University’s Math department.  
Observing report with new images. Christmas gift suggestions, including *Observer’s Calendar*
- December Short talk—Examples of recent imaging efforts by several members. Update on Dark-Sky preserve efforts.  
Equipment—Several items were donated to the centre for use by members.  
Social—*Observer’s Calendars* were offered for sale and the audience was invited to partake in a festive celebration.
- January Lecture—Dr. Chris Woodworth-Lynas—Mars (part 1)—NASA Mars Project
- February Meeting cancelled due to weather, 65 cm snow!
- March Lecture—Planetarium show at the Marine Institute Planetarium, by Garry Dymond.
- April Lecture—Dr. Chris Woodworth-Lynas, Mars (part 2): More about icebergs than Mars, examining features on Mars as possible ice-scour marks.
- May Short Talk—Nikolay Damyanov (Observing Director): 2017 Total Solar Eclipse. Nikolay presented a detailed review of the upcoming August total solar eclipse. The Eclipse will be a small partial in St. John’s but several members will be travelling to the centreline. Nikolay reviewed the eclipse schedule for St. John’s and noted upcoming eclipses, including the total eclipse of April 2024 in Newfoundland. There is unprecedented media interest in this year’s event. The 2024 eclipse event will likely continue the media coverage and early planning will be necessary.  
Member Night—Members presented recent observing activities, new gadgets, and astrophotography efforts.
- June Lecture—Dr. Penney Morrell, Mars (part 3): Mars Analogue Project  
Review of upcoming summer activities, star parties, eclipse travel, and other events
- September Lecture—Dr. Adam Henks (via teleconference), Looking at the Universe’s Oldest Light from the Earth’s Highest telescopes.  
A review of summer activities was held-over for the October meeting.

We are a small Centre, but have managed to replace fall-offs with new members, both young and old. 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

Another successful year for the Sarnia Centre.

We hosted meetings every month except for July and August. We book a local school library and the cost is \$11.30 for the year's meetings.

A number of our members made trips over the summer to see the eclipse down in the states.

The weather prevented us from entertaining the public on National Astronomy Day. We did participate in the Sarnia Hobbyfest in July, where a variety of clubs set up to inform the public of what we do. We set up a solar scope and scopes with solar filters although clouds prevented viewing most of the day.

We supplied the local library with solar eclipse glasses and instructions about viewing the eclipse.

One of our members made a presentation to a photography club about DSLR wide-field astrophotography.

A presentation was made to a Girl Guide troop.

One club member made a presentation on DSLR wide field astrophotography. Another member made a presentation about a visit to the Lowell Observatory. One club member made a presentation on tips and aids to photograph the eclipse. Members take turns presenting about upcoming viewing opportunities. Sometimes we will watch a video that a member found on line that is of particular interest.

**Stefan Jackson**  
Secretary

# SASKATOON

CENTRE

## Meetings and Presentations:

- January 16 Rick Huziak—*The New Explore the Universe Guide Handbook*  
Alan Duffy—Radio Astronomy using Software Defined Radio (SDR)
- February 27 Tenho Tuomi—The new RASC Astroimaging Certificate  
Alan Duffy—Using SDR and Radio Sky Spectrograph for Radio Astronomy: Tutorial/ Demonstration plus Examples of 'Data'
- March 20 Rick Huziak—Subaru & Dark Skies  
Brent Harrold—My five favourite Moons of the Solar System
- April 17 Ron Waldron—Under the Aurora Oval—Astronomical Adventures in Churchill, Manitoba  
Carl Finlay—A self-made Roll-Off Telescope Shelter
- May 15 Alan Duffy—Remote Telescope Astronomy Basics  
Mark de Jong—Variable-Star Observing with a Small Telescope



Deep-Sky Observing at the Sleaford Open House. Picture by Tim Yaworski.

- June 19 Alan Duffy—A brief Introduction into PixInsight  
Alan Duffy/Tim Yaworski—Discussion of National Star Party Plans
- September 18: Solar Eclipse Show & Tell! Open floor for anyone to talk about their solar eclipse experiences.  
Ron Waldron—Solar Eclipse in Wyoming with Rick Huziak—Ron & Rick's Eclipse Sojourn
- October 16: SSSP and Summer Observing Talks—Open floor for anyone to talk about their SSSP experiences.  
Discussion about Gravitational Waves caused by a neutron-star crash
- November 20: Rick Huziak—New issues with Light Pollution in Saskatoon  
Ashley Stock—Detecting Supernova Neutrinos at SNOLAB  
Tenho Tuomi—My 42-hr Solar Eclipse Trip
- December 11: RASC General Meeting and Christmas Social  
Observers Group Meetings at the Sleaford Observatory  
January 21, February 25, March 25, April 22, May 27, June 24, July 22, September 23, October 21, and November 18

## Public Outreach Activities:

- Youth Astronomy Club—January 30, February 27, March 27, April 24, May 29, September 25, October 30, and November 27
- August 21 Solar eclipse public viewing at three spots in Saskatoon, the biggest one (8th street E) with about 1500-2000 visitors, interest by local Broadcasting like Global News, CTV, Rock 102, etc., the other sites were at Saskatoon University and Diefenbaker Park.
- October 21 Sleaford Observatory Open House with about 200 attendees
- October 28 Dark Skies at Beaver Creek
- November 28 Rick Huziak spoke at the Café Scientific Science Lecture Series—The Fight for Dark Skies in Saskatchewan

## Special Events

- May 26-28 Grasslands East Star Party, joined by RASCals from Regina and Saskatoon. Talks and Star Nights attracted about 80 people.

August 23–27 21st Annual Saskatchewan Summer Star Party with more than 350 participants, Speakers: Louise Jones, Rena Woss, Dr. Mel Stauffer, Dr. Kathryn McWilliams

#### Centre Award Recipients

- Larry Scott: SSSP Sketch Contest Winner
- Tenho Tuomi: Astroimaging Wide Field Certificate
- Mark de Jong: AAVSO 1000 Visual Observations Award

#### Tenho Tuomi

*Secretary*



President Tim May presents the RASC Astroimaging Wide-Field Certificate to Tenho Tuomi.

## SUNSHINE COAST CENTRE

In April 2018, our Centre becomes 10 years old as an RASC Centre and 30 years old as an astronomy club, just in time for the sesquicentennial of the RASC.

Parks BC waived the \$200 registration fee requirement, so we will be bringing back Astronomy in the Park at Porpoise Bay Provincial Park after a year's absence.

The Observatory was open for members and the public 38 times this year to date with 159 people attending. This year our Centre became certified by the RASC Observing Committee to issue Explore the Universe certificates and pins. Unfortunately, we lost valuable observing time during the summer due to the smoke from various interior forest fires. Our observatory team replaced the old hand-crank roof retraction system with a new motorized system that makes roof retraction easier than ever.

Our Centre revised its loaner telescope program this year, taking time to fully examine and test our inventory of donated telescopes, sending some to recycling and others to a silent auction at our December meeting, which raised \$215 for the club. Loaner scopes will be stored and serviced at the new storage shed at the observatory and used on site. The observatory team is exploring the options involved in setting up pads to improve telescope set up.

Sunshine Coast Centre members participated in Earth Day in Roberts Creek, Pender Harbour Days, Halfmoon Bay Country Fair, Gibsons Sea Cavalcade, Canada Day in Sechelt, the Painted Boat Resort in Madeira Park, and the Harvest Festival at the Sechelt Botanical Garden. Our members held an outreach event for the total solar eclipse in August at Davis Bay, which not only broke

attendance records (crowd estimated at 2000) but smashed our donations record (\$25) when \$935 was donated by participants.

This year our Light-Pollution Abatement efforts reached a new level with the chair of our Light-Pollution Abatement Committee getting on the Advisory Group for the District of Sechelt's Integrated Community Sustainability Plan, which is to be completed by March 2018. In December 2017, our representative put forward a motion to have the District of Sechelt register itself with the IDA to become a Dark-Sky Community, and the motion passed unanimously.

Six nationally recognized experts gave presentations at our meetings, as well as an award-winning STEM Program student, Francesca Crema, from the Vancouver Centre, their Board's youngest director. We still lead all the other RASC Centres in use of the national Public Speaker Program. Three of these speakers (Dr. Harold Trottier, Dr. Julio Navarro, and Dr. Doug Scott) declined reimbursement, and the RASC is very grateful to them for donating their time. Speakers for our Centre next year include Dr. Jeremy Heyl, Dr. Sean Dougherty (director of DRAO and soon to become director of ALMA), Dr. Stanley Yen, Dr. Bill Wall, Sarah Pearce, Richard Shaw, Chris Gainor, Dr. Rob Thacker, and James Edgar.

Our reloadable IGA cards have been distributed both to members and to people attending our monthly talks. We get 4% of any purchases people make with these cards. These cards are bringing in regular income to our Centre.

Last year we entered into a partnership with the Sechelt Rotary Club called Friends of Rotary. The Sechelt Rotary club approved \$5200 in funding for the purchase of additional solar panels and a generator for the observatory, additional optical equipment, and the construction of a new storage shed and warm room for our observatory. Construction has begun on that project, which we expect to be completed by February 2018.

Mike Bradley and Bruce Fryer put in many hours preparing a Gaming Grant application, which was submitted in November and which we hope will bring in funds to purchase more optical equipment including new solar scopes for outreach.

Our Night Lights TV program for Coast Cable taped its third season this year. We took a road trip in July to the DRAO at White Lake, the Okanagan Centre's observatory, and Jack Newton's Observatory B&B in Osoyoos to capture footage, as well as our "Eclipsomaniacs" trip to Monmouth, Oregon, to capture footage of the total solar eclipse in August. In February our BravoFACTUAL documentary was released on YouTube ([www.youtube.com/watch?v=y4FgmDgKDCg&t=721s](http://www.youtube.com/watch?v=y4FgmDgKDCg&t=721s)).

This year two members of our Centre, both who had been RASC members prior to the formation of our Centre, were nominated for RASC Service Awards: Neil Sandy and Brian Lucas. Bill Clark was not eligible for a Service Award, as he had not yet reached the required 10 years of membership. However, the Board agreed to a special Meritorious Service Award, which was presented to Bill at our October meeting by national Past President James Edgar.

Regards and Clear Skies,

**Charles Ennis**

*Past President*

In 2017, Thunder Bay Centre continued its efforts to bring astronomy to the people of our city. We participated in a number outreach programs and are slowly becoming known as the purveyors of astronomical knowledge.

## Membership

As of the end of December, the Centre had 47 members.

Our general meetings are held on the second Tuesday of each month, excluding July and August, where attendance was between 16-20 per meeting.

## Presentations

- January Heather Laird (member of the Calgary RASC via Skype)—Canadian Women In Astronomy
- February David Shepherd—What's On The Radar For 2017 at DTAO  
Mitchell Bagdon—The Scale of the Universe  
Brendon Roy—Binary Stars
- March David Shepherd—Welcome RASC  
Doug Stuart—Binocular Optics
- April David Shepherd—Walking With The Astronauts  
Brendon Roy—Brown Dwarfs
- May Mitchell Bagdon—Cepheid Variable Stars: Why Do They Pulsate?
- June Doug Stuart—Information for August 2017 Eclipse Trip  
Brendon Roy—Year In Review
- September Brendon Roy—Johannes Kepler



- October Annual General Meeting of the Thunder Bay Centre. Position of Treasurer was open and member Brigitte Schaffer was elected to the position.
- November Doug Stuart—How to Keep an Observing Log
- December Brendon Roy—An Interstellar Visitor

## Outreach Events

February—Science Carnival hosted by Science North

This annual public event was held on the Lakehead University campus. The Centre had three volunteers available to answer the flood of astronomy questions from both children and adults. It was a great success with many *Star Finders* and *Moon Gazer's Guides* being distributed.

April—Northwestern Ontario Regional Science Fair

The Centre was asked to set up a booth for the children attending the Science Fair. We had handout materials available and we encouraged kids to have an interest in astronomy and the sciences.

June—Creekside Nursery

Every year, Creekside Nursery in Thunder Bay holds a "Dawn to Dusk" sale that sees more than 100 customers line up from 1-5 a.m. waiting for the doors to open. While the customers were in line, Centre members had telescopes set up for viewing, as well as handouts and *SkyNews* magazines available. Unfortunately, it was very cloudy, so not much observing was done. Many people came by to ask questions and we hope to make this an annual event going forward.

August—Quetico Provincial Park

The Centre was invited to attend Astronomy Weekend at Quetico again this year. The Friday night presentation saw many campers (30-40) in attendance, followed by some telescope observing. There were many "oohs" and "aahs" thanks to the Perseid meteor shower that weekend. Saturday afternoon we had two telescopes for solar observing: a 200-mm Meade SCT and a 40-mm Coronado PST. The Saturday night presentation had fewer attendees, but they were very interested and had many questions. That was followed by another clear night under the stars.

September—Sleeping Giant Provincial Park

Our largest outreach event of the year is always at Sleeping Giant Provincial Park on Labour Day weekend. This year the Centre provided three talks given by members Brendon Roy, Dave Gallant, and Randy Martin. The talks were well received by the campers but, unfortunately, the weather did not cooperate and no real observing sessions took place.

## Special Events

August 21—Solar Eclipse Viewing in Thunder Bay

Although the Thunder Bay Centre did not hold an official viewing party for the solar eclipse, we nevertheless had an impromptu public gathering at our local Hillcrest Park. Three of our Centre members were present and over 100 members of the public come out to see the partial eclipse. It was also well covered by our local media.

## Awards (Galactic Contributions)

At the June general membership meeting, President Brendon Roy unveiled our commemorative plaque from the IAU for the "NameExoWorlds" contest. Congratulations and many thanks to Maureen Nadin and the naming committee for their successful efforts!

**Andreas Buchholz**  
Secretary





## TORONTO CENTRE

It's been another very busy year for the Toronto Centre of the RASC, so let's get started!

### Meetings

Paul Markov and Paul Delaney hosted all Recreational Astronomy Nights and Speaker Nights, respectively, at the Ontario Science Centre, with Tom Luton stepping in for the January and July RAN. September Speaker's night, the first of the Charles Darrow lectures, was held in the Imperial Oil Auditorium at the OSC.

Special thanks go to Andrew and Elizabeth Reid for filming our talks for live streaming. Past talks can be viewed on YouTube.

### 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, and Adrian Aberdeen 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 GTA.

Weather conditions were better than average this past year, with City Star Parties being held in 11 of the 12 months, just missing March. Conditions for Dark Sky Star Parties are more restrictive than for City Star Parties. Even so, we were successful in holding 10 events, missing only November and January. The July and August events saw close to 100 members and non-members enjoying the views.

### Education and Public Outreach

The RASC-TC EPO group reached out to well over 15,000 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 GTA, our First Light course for new members, and major star parties, such as the Canada 150 and the August 2017 solar eclipse. The solar eclipse set a record for the Toronto Centre, with an estimated 12,000 people attending the observing session at the Ontario Science Centre.

### Eclipse Expeditions

A group of six members travelled to Salem, Oregon, to observe the total solar eclipse of August 21 from the campus of Willamette University under clear skies. Along with photographs of the eclipse, they gathered temperature readings and contact times during the

eclipse. After over 40 years of eclipse expeditions, the Toronto Centre eclipse flag is now full.

### E.C. Carr Astronomical Observatory (CAO)

There were 1,060 person-day visits to CAO during the 2017 fiscal year including 11 public outreach events, the annual Toronto Centre Awards Picnic and two work parties for maintenance and special facility projects. Multiple outreach events at the CAO included Scouts youth groups, Probus, the Beaver Valley Bruce Trail Association volunteers, the Thornbury library, Blue Mountain Resort, and a special "open house" session for the August solar eclipse.

### Light-Pollution Abatement

On October 19 an announcement letter about the Best Practices in Lighting Document was distributed to the 44 Toronto City councillors. The announcement letter also included the first four pages of the Best Practices document. The distribution of the document to City Councillors marks the completion of ten years of effort on the project by the committee; the document is available on the Centre website.

### Web Team

The Toronto Centre's website's reach increased to 48,600 visitors (+36%). Most of the increase can be attributed to the solar eclipse in August. A total of 482 events, news items and articles were posted or updated to our website during the reporting period. Our efforts on social media paid off. At the time of writing we have 969 followers (last year: 992) on Twitter and 1238 (last year: 878) likes on Facebook.

**Tom Luton**  
*Secretary*

## VANCOUVER CENTRE

In 2017 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. We hosted 13 major public events (with 12 free public lectures), 25 free public astronomy observing events, and were major contributors toward 25 educational events.

Our largest event of the year (by far) was the Partial Solar Eclipse at Science World, where we shared this event with more than 10,000 other enthusiasts. In addition, we have continued our collaborations with Simon Fraser University (SFU) and Metro Parks;

Astronomy Day (in conjunction with Science Rendezvous at SFU) saw ~1,000 visitors, and the Perseid meteor shower and observing at Aldergrove Lake Park (with Metro Parks) saw ~1,200 visitors.

Our partnership with SFU has continued to grow, and the Centre has supported the Starry Nights public outreach program, plus our members are making use of the 20% allotment of time for the Trottier Observatory. Vancouver Centre 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," as well as appearances by Howard Trottier, Suzanna Nagy, and Kyle Dally in various media outlets.

Vancouver membership went up to 251 members compared to 233 in 2016 (at the beginning of December).

The 2017 lectures were highlighted by the Paul Sykes Memorial Lecture featuring NASA research scientist Dr. Linda Spilker speaking about the *Cassini* probe and some highlights of what has been learned about Saturn and its moons.

Other speaking highlights through the year included:

- Dr. Kiyoo Masui – Fast Radio Bursts: a mysterious new class of astronomical object
- David A. Rodger – My life among the stars. Astronomy outreach and the H.R. MacMillan Planetarium
- Dr. Jon Willis – All These Worlds Are Yours: The Scientific Search for Alien Life
- Harry Hooge Elementary School grade 6 students presenting their astronomy videos and presentations
- Dr. Phil Stooke – Mapping asteroids and other non-spherical worlds
- Dr. Brian J. Anderson – Planet Mercury
- Mr. Hugo Cáceres – Astro tourism in Chile
- Mr. James Edgar – Synthesis of Elements in Stars
- Dr. Mark Halpern – CHIME: A dark energy experiment in the Okanagan

There have been a number of changes to the Board at the end of year and we would like to give a huge thanks for the time, effort, and great work put in by our outgoing Board members:

- Suzanna Nagy has concluded her two-year term as President.
- Bruce Hutchison—Treasurer
- Elena Popovici—Membership Director
- Adrian Mitescu—Secretary

A Volunteer Award was given to Jennifer Kirkey, a longtime member and volunteer, for her outstanding service to the Vancouver Centre.

**Olivier Eymere**  
*Secretary*

# VICTORIA

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CENTRE

Both membership and the activity level of the Victoria Centre continued to increase in 2017. Membership was over 260 members in September with an annual average around 245. The Centre co-ordinated the organization of another series of Summer Star Parties at the Dominion Astrophysical Observatory; a total of 19 evenings were held this year from the end of April to late September. We held another, well-attended RASCals Star Party in Metchosin to coincide with the National Star Party at the end of July. Monthly meetings, the RASCals Star Party, and Summer Star Parties included many presentations given by professional astronomers based at the University of Victoria and Herzberg Astronomy and Astrophysics. We made use of the Public Speaker Program to have members from other B.C. Centres present to us at our September and October monthly meetings. The Centre's weekly Astro Café meetings increased further in popularity with the addition of a high-quality television. We are grateful to one of our members for making a superb monitor cabinet to protect the television.

## Outreach Summary

Public outreach activities included:

- Total Galileo moments—estimated at more than 10,000
- RASC members participating—more than 40

As well as conducting numerous outings, members judged at the Vancouver Island Regional Science Fair. While the school program was under the leadership of Sid Sidhu, Ken Mallory did the public activities as outreach coordinator.

The school program is in high demand. There may be as many as ten classroom presentations each week and frequent night-sky viewing as weather permits. Many hours are devoted by a core of members.

The Centre assisted two Victoria teachers with the preparation of an Astronomy 11 course. Centre members offered advice about equipment to purchase and assisted with the donation of telescope to the school. The course will be offered for the first time in the second semester of the 2017–2018 school year.

## Outreach Events

January 21	Astrophotos Accompany Herchel's Music
April 9–10	Regional Science Fair
April 29	International Astronomy Day
Most Saturdays	from April 29 to September 23 Dominion Astrophysical Observatory (DAO) Summer Star Parties
July 9	Saanich Strawberry Festival
July 27–29	RASCals Star Party
August 11	Fort Rodd Hill Star Party
August 21	Solar Eclipse
September 2–4	Saanich Fair
September 23	Fall Fairfield Fete

Astro Café—Monday evenings from September through May is held at the Fairfield Gonzales Community Centre.

Our 8 monthly meetings were held at the University of Victoria with excellent speakers, usually provided by the Herzberg Astronomy and Astrophysics program or the University of Victoria.

## Monthly Meeting Speakers

January	John Blakeslee (NRC Hertzberg)—The MASSIVE Galaxy Survey
March	Julia Foght (U of A Professor Emerita)—Bugs in Space!? A Microbiologists View of Astrobiology and the Habitable Zone
April	Kyle Oman (UVic PhD Student)—Dark Matter: Small Scales, Big Problems
May	Benjamin Gerard (UVic PhD Student)—Imagining New Worlds
June	Lisa Locke (NRC Hertzberg)—Radio and Microwave Astronomy—History, Canadian Involvement and Interesting Tidbits
September	Ted Stroman (RASC Vancouver)—The Formation, Development, and Geology of the Moon
October	Wendell Shuster (RASC Okanagan)—Historical Supernovae
December	Chris Pritchett (UVic Professor Emeritus)—Supernovae and the Meaning of Life

The Annual General Meeting was held at the Cedar Hill Golf Course on November 18.

Centre Council Meetings take place on the first Wednesday of alternate months and are open to all members

*SkyNews*, available at [victoria.rasc.ca/skynews](http://victoria.rasc.ca/skynews), is the Centre's monthly newsletter, published 10 times per year, and edited by Reg Dunkley.

Our website is hosted by Matt Watson and maintained by Webmaster Joe Carr, with contributions by several Centre members.

The Active Observers Group meets at the Victoria Centre Observatory (VCO), plus observing sessions are scheduled on Friday nights from the late spring through the summer and on Saturday nights during the remainder of the year.

Michel Michaud is qualified as an operator of the Plaskett Telescope, and he gets time on the telescope for use by Centre members.

The Messier Marathon was scheduled for March 25, but the weather did not cooperate.

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

For many Centre members, the August 21 total eclipse was an event of a lifetime. Over 30 Victoria RASCals headed south to various locations along the path of totality.

Karun Thanjavur of the University of Victoria's Department of Physics and Astronomy, Sherry Buttner, Nelson Walker, and Chris Purse host monthly Friday evening sessions at the University of Victoria Observatory's 80-cm telescope.

The observing gear in the VCO was upgraded this year from a Meade 350-cm SCT and a piggybacked Tele Vue NP127is to a 406-cm TPO Richey-Chrétien truss-tube telescope. Further upgrades are planned.

**Chris Purse**  
*Secretary*

Windsor has consisted of a membership average of about 90–100 people during 2017. 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: the Aboriginal Australian Sky; The Great American Eclipse 101; Astronomy: Gateway to Science; Our Home: The Milky Way; and Colonizing Mars, to name a few. During each member's meeting, we have a Director of Observing report, which highlights events in the night sky for the following month. At our November meeting, we present 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](http://www.rascwindsor.com), and 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 warm-up room connected to it, including an observation deck attached on the outside. Within the dome is our pier-mounted Celestron 14 Schmidt-Cassegrain telescope, with an Astrotech 111 (member owned) refractor mounted onto it. A CCD camera is used for auto-guiding, all of which is operated via a warm-room computer.

Due to the popularity of our Public Open House evenings, which were held once each month, we've had to change our game plan. 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 20–25 per night. Along with the new guest policy came a larger responsibility for the Council member, Nancy Ng, who offered to arrange the scheduling. A Google calendar was implemented and shared among members who volunteer as hosts at the Hallam Observatory. To date, this has been proven successful, and is the safest option for both our volunteers and guests. When the Hallam Observatory isn't hosting guests, our members are able to use it; each receives training on use of dome and equipment, plus an access key. This is allowed for a small annual fee to help pay for the electricity, heat, and maintenance.

There have been a few special 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 splendours of the night.

We are looking forward to a safe and successful 2018!

**Dan Perissinotti**  
*Secretary*



Winnipeg Centre membership currently stands at 230-235 members—up about 10%.

We hold monthly meetings that are open to the public, and 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. Starting with a beginner's session, followed by "What's up," reviewing upcoming astronomical events and viewing opportunities for the month, and "What's new," which is an update of current astronomical topics and events in the news. We also have sessions on other topics of interest, including RASC programs and certificates, imaging, astrophotography, and computer applications. This year we had presentations from two visiting keynote speakers:

Dr. Ed Cloutis from the University of Winnipeg: The *OSIRIS-REx* asteroid sample return mission and Canada's role;

William B. McKinnon from Washington University in St. Louis: Pluto revealed! Results from NASA's *New Horizons Mission*. Dr. McKinnon was funded by the PSP.

Local speakers included Jay and Judy Anderson, Mick Rice, Brenden Petracek, and Adam Rogers (from the University of Manitoba).

The meetings are well attended and often attract 80 or more members and guests. The meetings are followed by pizza and beer at a local restaurant.

The meetings are recorded and linked to our email forum after the meeting. Older recordings are available on YouTube.

Our June meeting is a barbecue. The July meeting was held at the Science Gallery and Planetarium at the Manitoba Museum and included a planetarium show hosted by Scott Young.

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 Winnipeg, where a dome houses a 12-inch Meade LX telescope; plus, a warm room adjoins, complete with restroom facilities. A concrete pad to the south, complete with power posts, allows members to set up their own equipment. This is where we hold our "Member's Observing Night," on the Saturday following regular meetings. Observatory



Astronomy Day at Chapter's Bookstore

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, this month in history, "classical glass" reviewing members' older scopes, and an urban astronomy series.

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

### Spruce Woods Star Party (SWSP):

One of our favourite annual events is the Spruce Woods Star Party. Organized by Silvia Graca, it 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, and the Centre provides the park with a public observing night in exchange. Over the years the Centre has developed a close relationship with Spruce Woods Park, working together preparing to apply for a Dark-Sky Preserve designation.

The 2017 public viewing event was held on September 1-4, with solar viewing, a sky tour, and presentations by members, followed by an observing session.

SWSP is the highlight of the Winnipeg Centre's year, however, we had rain and overcast skies for all but one night between September 21-24. Despite the weather, the attendees had a great time together, with Gerry Smerchanski presenting an awesome collimation clinic. Highlights of the weekend included a lecture on the Sun by Danielle Pahud (Professor of Astronomy and Physics at the U of M), and a talk on LIGO and dark matter presented by Kevin Mogk (from the Manitoba Museum).

The last evening features a banquet in the nearby town of Glenboro. The event closed with a holiday Sunday morning breakfast.

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

- "Astronomy Night," held in March for Fort Whyte Alive, a regional conservancy centre. It features our members providing presentations during a banquet, followed by telescope observing with Winnipeg Centre members.
- On a regular basis we support the Oak Hammock Marsh, a nature centre located 30 km north of the city, for their monthly Astronomy Observing Night. Winnipeg members provide presentations followed by telescope viewing sessions.
- The Centre has partnered with the U of M Department of Physics and Astronomy for their Open House program. Held on the last Wednesday of the month during the scholastic year, it welcomes students to the University Planetarium for a presentation, followed by an observing session at the Ewen Campus Observatory, with supporting telescopes provided by Winnipeg members.
- We participated in the International Astronomy Day festivities by setting up a daytime display inside a local Chapter's bookstore, with a few solar telescopes set up for supervised public viewing outside.
- Whiteshell public outreach event (presentations by

Winnipeg members, followed by an observing session.)

- I Am Festival outreach in Teulon: August 18–20
- Spruce Woods public outreach: September 1–4

The Winnipeg Centre also supports the Manitoba Schools Science Festival by providing judges and 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.

#### Awards

- Outstanding Service Award—Kris Keller for his exceptional efforts at all RASC meetings and events.
- Outstanding Achievement Award—Tim Kennedy for his work to help establish a Dark-Sky Preserve at Spruce Woods Provincial Park

**Clifford Levi**  
*Secretary*

## YUKON CENTRE

The Yukon Centre has been very active in 2017. Our regular, bi-weekly, Monday night astronomy workshops ran year-round, except summer break between July and August. Anthony Gucciardo and Vikki Zsohar presented various topics in popular astronomy to members and visitors at the Yukon College. Our attendance numbers were always between 4 and 15. Vikki's Stellar Evolution Series resulted in attendances between 5 and 15 for the three events.

The Centre has been active with outreach activities as well. The following public workshops and outreach events were held in 2017:

- Vikki Zsohar: Telescopes 101 public workshop, Yukon College. 10 persons. March 13
- Thomas Jacquin: Astrophotography public workshop. 15 persons. April 3

For the second consecutive year, the Yukon Centre continued to participate in the Kluane Northern Nights Festival, a public outreach event in partnership with Parks Canada, September 22



Yukon Centre observatory construction site



2017 Solar Eclipse Tour in Oregon, USA

and 23. Professional photographers, such as Centre member Ingrid Wilcox, prepared outstanding images of the Kluane's dark starry sky, while Centre volunteers assisted with presentations and observation with telescopes to the approximately 40 people gathered at the magical Kathleen Lake.

Anthony Gucciardo represented the Yukon Centre at the Tourism Industry Association's conference in Dawson City, Yukon. His presentation about Northern Astronomy Tourism was received well by both private companies and government.

The Centre successfully engaged in the Aurora 360 Aurora Flight event with partners Air North and Yukon Tourism, between November 24–26. Participants attended a reception where Christa van Laerhoven, planetary scientist, gave a presentation about the science of the auroras; other entertainment by local artists was also presented. Pierre Paquette and Neil Zeller assisted flight participants to set up their cameras, and they also provided astrophotography presentation to them. Approximately 120 persons were at the reception, while about 80 people flew and saw the aurora oval; 40 people attended the astrophotography event at a local aurora outfitter's campsite.

Participants also looked through a 9-inch refractor provided by Vikki Zsohar. Outreach educators were Christa van Laerhoven, Pierre Paquette, and Neil Zeller, while Anthony Gucciardo helped organizing the event with our partners.

The Centre also held other special events, such as the 2017 North American solar eclipse, and a special Guest Night during its first Star Party.

August 21: Partial solar eclipse outreach at Shipyards Park, Whitehorse, was held with approximately 300 participants. Organizer was Gerry Whitley. Over 1500 solar viewing glasses were sent out by Anthony Gucciardo to both the visitor centres of Yukon communities, and Vancouver. The University of British Columbia solar eclipse outreach event was organized by Christa van Laerhoven. The Yukon Centre also organized a Total Solar Eclipse Tour to Huntington, Oregon, with seven participants. We estimate that the total number of people who witnessed the eclipse, both Yukon-wide and at UBC, is about 4000 individuals.

We also organized the first-ever Yukon Star Party between October 20–27, with public speakers Phil Plait, Pierre Paquette, and Christa van Laerhoven. Presentations were also held by our members Thomas Jacquin, Forest Pearson, and Anthony Gucciardo. Approximately 100 participants attended during the week. The





Partial Solar Eclipse from Whitehorse, Yukon, Image Courtesy: Chris Lomas

in 2018. Project manager: Vikki Zsohar.

The Yukon Centre values the work and dedication of both its volunteers and members with specific achievements.

Congratulation to Thomas Jacquin for his design of All-Sky Cameras, that are now in use in a number of countries.

Congratulation to Forest Pearson for successfully advancing Light-Pollution Abatement in the Yukon. Because of his work, Yukon Energy now offers 40% rebate for newly installed, dark-sky friendly lighting on commercial buildings and applications throughout the Yukon.

Congratulations to Maurice Goguen for achieving his Explore the Universe certificate, in January 2017.

Congratulations to Whitehorse resident Julie An Caduhada for being a weekly photo winner at the *SkyNews* "Photo of the Week."

The Yukon Centre extends its thanks to Anthony Gucciardo, past Yukon Centre President, who serves now as Treasurer at the national Board of Directors.

Special thanks to all the other volunteers and members of the Yukon Centre for their hard work and dedication to make all 2017 society programs and events successful.

**Vikki Zsohar**  
*Yukon President*

two public speaker events with Special Guest, Phil Plait, drew approximately another 100 people in Whitehorse. Our star party was sponsored with silent auction items, such as telescopes and air tickets, provided by All-Star Telescope, KW Telescope, Sky-Watcher, Celestron, and Air North. We are looking forward to our next star party in 2018.

The Centre continued to organize its astronomy-related college courses at the Yukon College. As the result of the collaboration with the Yukon College, three non-credit courses will run in 2018. The Yukon Centre also progressed the design of its future observatory and prepared necessary documents to apply for project funding from the Yukon Government. Figure 5 shows the current status of our observatory site. Upon possible funding, the Yukon Centre may have an operational observatory



Solar Eclipse Outreach at UBC





Kluane Sky, Image Courtesy: Ingrid Wilcox

# CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2017

		Belleville	Calgary	Edmonton	Halifax	Hamilton	Kingston	Kitchener-Waterloo	London	Mississauga
<b>REVENUE</b>										
Membership	Membership Fees: Centre Fee	745	9,920	7,066	2,976	3,430	1,299	3,216	3,559	3,763
	Membership Fees: Affiliate						23			
	Membership Fees: other									
	Centre Newsletter				204					
Donations / Fundraising	Donations		5,718	160	73		1,077			
	Fundraising									
Sales Revenue	Sale of Observer's Handbooks									
	Sale of Observer's Calendars	144	240	2,255	1,116	255	240	780	673	405
	Other Publication Sales									
	RASC promotional items	137				65	138	185		
	Other Sales		140				86			1,230
Subscription Revenue	Astronomy / Sky & Telescope									
	Other									
Events Revenue	Star Parties	88	2,387	4,325	2,655		1,141			
	Annual Dinner		2,220					1,560	1,084	
	Astronomy Day									
	Meetings									
	Other Events	312				16,153				
General Assembly Revenue	General Assembly									
Miscellaneous Revenue	Interest and Dividends	1	2	57	133		136	39		
	Advertising									
	Observatory Site		250			250				
	Equipment Rentals/Loans		2,740							
	Public Services, events, outreach			72,649						
	Miscellaneous			1,115				583		
<b>TOTAL REVENUE</b>		<b>1,427</b>	<b>23,617</b>	<b>87,627</b>	<b>7,157</b>	<b>20,153</b>	<b>4,140</b>	<b>6,363</b>	<b>5,316</b>	<b>5,398</b>
<b>EXPENDITURES</b>										
Sales Expenses	RASC Publications	427	200	1,583	226	435		473	673	405
	Other Publications		150						57	192
	Newsletter			286	455		120		139	
	RASC promo items	154	479				352	317		
	Other		370				99			69
Event Expenses	Star Parties		1,110	5,673	3,188		1,053	18		
	Annual Dinner	320	2,311			10,341		2,170	1,084	709
	Astronomy Day									
	BIYA									
	Meetings		1,430	1,776	785	817	407	399	11	600
	Other Events	214	1,035	8,318	1,365	104	112		708	
Travel	General Assembly and Council Meetings		310	1,312	117			187		
Administrative Expenses	Office Administration	15	735	16	404	625	69	321		277
	Equipment and Supplies		1,501	150	79		118			
	Insurance		5,400	1,674	1,251	1,611	486	486		486
	General Expenses and Audit			310			81	108		
	Awards		886	140				158		163
	Donations			3,840	129				500	
	Advertising			150					122	120
Miscellaneous Expenses	Observatory and Site Expenses		2,572	15,423	507	3,277		516	624	
	Equipment & Supplies/Library			330		60				
	Depreciation		14,183		728					1,096
	Miscellaneous		895	4,784		3,033	269	208		163
<b>TOTAL EXPENDITURES</b>		<b>1,130</b>	<b>33,567</b>	<b>44,840</b>	<b>9,235</b>	<b>20,304</b>	<b>3,166</b>	<b>5,362</b>	<b>3,918</b>	<b>4,280</b>
<b>SURPLUS OR DEFICIT ON OPERATIONS</b>		<b>297</b>	<b>-9,950</b>	<b>42,787</b>	<b>-2,078</b>	<b>-151</b>		<b>1,001</b>		<b>1,118</b>
ASSETS	Current assets	6,635	73,273	125,305		27,816	29,093	15,737	8,543	16,935
	Capital assets	720	26,146	270,500		104,178			35,758	1,096
	Total assets	7355	99,419	395,805		131,994	29,093	15,737	44,301	18,031
LIABILITIES	Current liabilities		20					425		
	Long-term liabilities			60,000						
EQUITY	Net Equity	7,355	99,399	335,805		131,994	29,093	15,312	44,301	18,031
<b>TOTAL LIABILITIES AND EQUITY</b>		<b>7,355</b>		<b>395,805</b>		<b>131,994</b>		<b>15,737</b>	<b>44,301</b>	<b>18,031</b>

# CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2017

		C. F. de Montréal	New Brunswick	Niagara	Okanagan	Ottawa	Prince George	Québec	Regina	St. John's
<b>REVENUE</b>										
Membership	Membership Fees: Centre Fee	3,609	1,848	1,825	2,700	7,154	2,556	548	1,192	1,368
	Membership Fees: Affiliate									
	Membership Fees: other			50	590					
	Centre Newsletter									
Donations / Fundraising	Donations	200		1,166	5,736	25,242	8,000		1,160	355
	Fundraising		673	166	5,367		12,000		3,194	
Sales Revenue	Sale of Observer's Handbooks									
	Sale of Observer's Calendars		640	112	860	1,137		210	745	840
	Other Publication Sales									
	RASC promotional items			46	442					105
	Other Sales		903	888	764		941			
Subscription Revenue	Astronomy / Sky & Telescope									
	Other									
Events Revenue	Star Parties								8,175	
	Annual Dinner				7,616	1,935				
	Astronomy Day									
	Other Events						699			
General Assembly Revenue	General Assembly		947			1,266				
Miscellaneous Revenue	Interest and Dividends	1,119		280	17	335				149
	Advertising									
	Observatory Site									
	Equipment Rentals/Loans				10	182				33
	Public services, events, outreach						625		275	
	Miscellaneous			132	723	1,391	101			
<b>TOTAL REVENUE</b>		<b>4,928</b>	<b>5,011</b>	<b>4,665</b>	<b>24,825</b>	<b>38,642</b>	<b>24,922</b>	<b>758</b>	<b>14,741</b>	<b>2,850</b>
<b>EXPENDITURES</b>										
Sales Expenses	RASC Publications		724	203	593		592		933	863
	Other Publications									
	Newsletter									
	RASC promo items		919	58	441					110
	Other		290	732	492	151	14			
Event Expenses	Star Parties		356	134					6,321	121
	Annual Dinner		1,362		2,432	2,887				
	Astronomy Day									
	BIYA									
	Meetings		59	456	114	36			500	125
	Other Events				573	639	519		112	160
Travel	General Assembly and Council Meetings				478		97			
Administrative Expenses	Office Administration		150	591		436	55	201	50	55
	Equipment and Supplies		907	241	1,198		437	46		205
	Insurance	856	254		486	2,203		34		486
	General Expenses and Audit			120					545	
	Awards				56	622				
	Donations		25	350						
	Advertising			91			440		291	
Miscellaneous Expenses	Observatory and Site Expenses	1,438		149	18,713	2,241	13,138		3,142	
	Equipment & Supplies/Library				94	83				
	Depreciation		232	845		3,761				
	Miscellaneous	167		435	1,806		1,027	112	517	
<b>TOTAL EXPENDITURES</b>		<b>2,461</b>	<b>5,278</b>	<b>4,405</b>	<b>27,476</b>	<b>13,060</b>	<b>16,319</b>	<b>637</b>	<b>12,411</b>	<b>2,125</b>
<b>SURPLUS OR DEFICIT ON OPERATIONS</b>		<b>2,467</b>	<b>-267</b>	<b>260</b>	<b>-2,651</b>	<b>25,582</b>	<b>8,603</b>	<b>122</b>	<b>2,330</b>	<b>725</b>
ASSETS	Current assets	81,975		10,100	32,105	63,179	8,955	697	16,759	27,189
	Capital assets	21,655		14,885	251,034	26,181	118,775		72,725	
	Total assets	103,630		24,985	283,139	89,361	127,730	697	89,484	27,189
LIABILITIES	Current liabilities			263			-670			121
	Long-term liabilities					1,374				
EQUITY	Net Equity	103,630		24,722	283,139	87,987	128,400			27,068
<b>TOTAL LIABILITIES AND EQUITY</b>		<b>103,630</b>		<b>24,985</b>	<b>283,139</b>	<b>89,361</b>	<b>127,730</b>	<b>697</b>	<b>89,484</b>	<b>27,189</b>



# CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2017

		Sarnia	Saskatoon	Sunshine Coast	Thunder Bay	Toronto	Vancouver	Victoria	Windsor	Winnipeg	Yukon
<b>REVENUE</b>											
Membership	Membership Fees: Centre Fee	265	2,747	1,368	1,140	19,138	5,434	5,168	2,879	4,213	1,076
	Membership Fees: Affiliate										
	Membership Fees: other								1,130		
	Centre Newsletter										
Donations / Fundraising	Donations		70	1,036	188	7,690	1,019	5,570	2,604		
	Fundraising		390	1,213		2,031			460		23,769
Sales Revenue	Sale of Observer's Handbooks						139				
	Sale of Observer's Calendars	120		269	1,010	2,331	1,381	581	1,773	708	
	Other Publication Sales										
	RASC promotional items			236							
	Other Sales		301			10,264	745	800			
Subscription Revenue	Astronomy / Sky & Telescope										
	Other										
Events Revenue	Star Parties		16,670					693			
	Annual Dinner							1,572			
	Astronomy Day										
	Other Events			1,058	780						329
General Assembly Revenue	General Assembly										
Miscellaneous Revenue	Interest and Dividends		122		8		7,266	11		27	
	Advertising										
	Observatory Site					20,561					
	Equipment Rentals/Loans										
	Public Services, events, outreach										
	Miscellaneous			1,044			665	1,916		500	
<b>TOTAL REVENUE</b>		<b>385</b>	<b>20,300</b>	<b>6,224</b>	<b>3,127</b>	<b>62,015</b>	<b>16,649</b>	<b>16,311</b>	<b>8,846</b>	<b>5,448</b>	<b>25,174</b>
<b>EXPENDITURES</b>											
Sales Expenses	RASC Publications			252	531			629	1,146	785	
	Other Publications	99						179		339	
	Newsletter						860	200			
	RASC promo items			222	25		3,492	14			
	Other	150				702		99			
Event Expenses	Star Parties		17,825					744			
	Annual Dinner							1,462			
	Astronomy Day							2,578	110		
	BIYA										
	Meetings			1,649			2,249	412	996	714	
	Other Events		236	250			683	2,882			
Travel	General Assembly and Council Meetings										616
Administrative Expenses	Office Administration		519	355	126	30,847	867	478			108
	Equipment and Supplies	40					767				
	Insurance		1,391	542		4,000	486	500	2,038	655	
	General Expenses and Audit					6,742	809			48	
	Awards			138		500	500	423		593	
	Donations										
	Advertising			96		2,034	234		226		
Miscellaneous Expenses	Observatory and Site Expenses		2,313	67			466	8,669	1,583	95	
	Equipment & Supplies/Library						35			802	
	Depreciation		1,477			13,178	865				
	Miscellaneous	4		866	2,511		1,203	378	52	203	
<b>TOTAL EXPENDITURES</b>		<b>293</b>	<b>25,553</b>	<b>4,437</b>	<b>3,193</b>	<b>58,003</b>	<b>16,093</b>	<b>17,179</b>	<b>6,041</b>	<b>4,958</b>	<b>15,881</b>
<b>SURPLUS OR DEFICIT ON OPERATIONS</b>		<b>92</b>	<b>-2,253</b>	<b>1,787</b>	<b>-67</b>	<b>4,012</b>	<b>555</b>	<b>-868</b>	<b>2,805</b>	<b>490</b>	<b>9,293</b>
ASSETS	Current assets	2,408	6,057	4,407		148,765	364,730	9,726	7,341	15,507	
	Capital assets		34,301	46,941		327,673	10,814	32,300	80,000		
	Total assets	2,408		51,348		476,438	375,544	42,026	87,341	15,507	27,336
LIABILITIES	Current liabilities					93,004					
	Long-term liabilities										
Equity	Net Equity			51,348		383,434	375,544	42,026	87,341	15,507	-342
<b>TOTAL LIABILITIES AND EQUITY</b>		<b>2,408</b>		<b>51,348</b>		<b>476,438</b>	<b>375,544</b>	<b>42,026</b>	<b>87,341</b>	<b>15,507</b>	<b>27,336</b>
<b>TOTAL LIABILITIES AND EQUITY</b>				<b>46,036</b>	<b>11,084</b>		<b>375,954</b>	<b>54,402</b>	<b>84,536</b>		<b>18,871</b>

# OFFICERS AND COUNCILS OF THE CENTRES—2018

## 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  
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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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Honorary President: Dr. Douglas Hube  
President: Sharon Morsink  
Past President: Luca Vanzella  
Treasurer: Jay Lavender  
Secretary: Mike Szelewicki  
National Representative: Alister Ling

## HALIFAX CENTRE

PO Box 31011  
Halifax NS B3K 5T9  
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halifax.rasc.ca  
halifax@rasc.ca

Honorary President: Dr. Roy Bishop  
President: Paul Gray  
First Vice-President: Melody Hamilton  
Treasurer: Gregg Dill  
Secretary: Judy Black  
National Representative: Pat Kelly

## HAMILTON CENTRE

PO Box 969  
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905-689-0266 (observatory)  
www.hamiltonrasc.ca  
emizzi@cogeco.ca

Honorary President: Roger Hill  
Past President: Gary Bennett  
President: Edward Mizzi  
Vice-President: Bob Prociuk  
Treasurer: Bill Leggitt  
Secretary: Chris Talpas  
National Representative: Andy Blanchard

## KINGSTON CENTRE

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kingston@rasc.ca

Honorary President: Dr. David Levy  
President: Rick Wagner  
Past President: Susan Gagnon  
Vice-President: Greg Latiak  
Treasurer: Kevin Kell  
Secretary: Steve Hart  
Directors: David Maguire  
Walter MacDonald

## KITCHENER-WATERLOO CENTRE

133 Weber Street North, Suite #3-127  
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secretary@kw.rasc.ca

Honorary President: David Garner  
President: Leonard Kuehner  
Past President: Gerald Bissett  
Vice-President: Bill Blackport  
Vice-President: Andrew Hill  
Treasurer: Steve Holmes  
Secretary: Jim Goetz  
National Representative: Terry Torra

## LONDON CENTRE

PO Box 842 Station B  
London ON N6A 4Z3  
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info@rasclondon.ca

Honorary President: Peter Jedicke  
President: Mike Hanes  
Past President: Rick Saunders  
Vice-President: Norm McCall  
Treasurer: Bill Gardner  
Secretary: Everett Clark  
National Representative: Mike Roffey

## MISSISSAUGA CENTRE

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Past President: Randy Attwood  
President: Jo Vanden Dool  
Vice-President: Andrew Opala  
Treasurer: Allan Connery  
Secretary: Chris Malicki  
National Representative: Leslie Strike

## CENTRE FRANCOPHONE DE MONTRÉAL

CP 206 Station St-Michel  
Montréal QC H2A 3L9  
514-201-3889  
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scattol@videotron.ca

President: Patrice Scattolin  
Vice-President: Guy Langevin  
Secretary-Treasurer: Pascal Francoeur  
National Representative: Patrice Scattolin

## MONTRÉAL CENTRE

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Honorary President: Dr. David Levy  
Past President: Ron Barron  
President: Morrie Portnoff  
Vice-President: Ron Barron  
Treasurer: Ben Chu Tang  
Secretary: Detlev Schmalhaus  
National Representative: Frank Tomaras  
Directors: Lloyd Coffin  
Chantal Féquière  
Richard Latulipe  
Gary Smith

## NEW BRUNSWICK CENTRE

26 Wilson Road  
Riverview NB E1B 2V  
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president@nb.rasc.ca

Past President: Curt Nason  
President: June MacDonald  
1st Vice-President: Chris Curwin  
2nd Vice-President: Peter Jensen  
Treasurer: Emma MacPhee  
Secretary: Curt Nason  
National Representative: Chris Weadick

**NIAGARA CENTRE**

c/o Dr. Brian Pihack  
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Past President: Brian Pihack  
President: Tim Barnes  
Vice-President: Darlene Marano  
Treasurer: Robert Lewis  
Secretary: Philip Downey  
National Representative: Janice Low

**OKANAGAN CENTRE**

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rasc.okanagan@shaw.ca

Past President: Colleen O'Hare  
President: David Hawkins  
Secretary: Christine Janzen  
Treasurer: Dennis Krause  
National Representative: Richard Christie

**OTTAWA CENTRE**

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garyboyle@explornet.ca

Past President: Gary Boyle  
President: Tim Cole  
Treasurer: Oscar Echeverri  
Secretary: Chris Teron  
National Representative: Rick Wagner  
Bill Wagstaff

**PRINCE GEORGE CENTRE**

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Past President: Gilbert Self  
President: Dayton Pollard  
Vice President: Robert Nelson  
Treasurer: Corey Bolen  
Secretary: Corey Bolen

**REGINA CENTRE**

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regina.rasc.ca

President: Vance Petriew  
Treasurer: Paul Meyer  
Secretary: Don Moreau  
National Representative: Ross Parker  
Past President: Mike O'Brien

**ST. JOHN'S CENTRE**

c/o Randy Dodge  
206 Frecker Dr  
St John's NL A1E 5H9  
www.stjohnsrasc.ca  
info@stjohnsrasc.ca

Past President: Robert Babb  
President: Garry Dymond  
Vice-President: Chris Stevenson  
Treasurer: Gary Snow  
Secretary: Randy Dodge  
National Representative: Marcellus Redmond  
Webmaster: Craig Peterman  
Observing Director: Nikolay Damyanov  
Librarian: Mike Morrow  
Membership: Marcellus Redmond

**SARNIA CENTRE**

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RR#1 Camlachie ON N0N 1E0  
akenyon@bell.net

President: Martin Cogswell  
Vice-President: Stefan Jackson  
Secretary: Martin Cogswell  
Treasurer: Martin Cogswell  
Vice Treasurer: Ralph DeJong  
Newsletter Editor: Ron Waldron

**SASKATOON CENTRE**

PO Box 317 RPO University  
Saskatoon SK S7N 4J8  
306-857-4707  
www.usask.ca/rasc  
skstars@shaw.ca

Past President: Les Dickson  
President: Alan Duffy  
Vice-President: vacant  
Treasurer: Norma Jensen  
Secretary: Marcel Muller-Goldkuhle

Membership Coordinator: Mark de Jong  
Observing Coordinator: Larry Scott  
Sleaford Site Coordinator: Darrell Chatfield  
Councillor at-large: Errol Frazer-Harrison  
National Representative: Rob Sheppard

**SUNSHINE COAST CENTRE**

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www.coastastronomy.ca  
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Past President: Michael Bradley  
President: Bill Clark  
Vice-President: Michael Bradley  
Treasurer: Bruce Fryer  
Secretary: Muguette McDonald

National Representative: Charles Ennis  
Other Directors: Scott Harlow  
Bruce Woodburn

**THUNDER BAY CENTRE**

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novationheart@hotmail.com

Past President: Bruce Miron  
President: Brendon Roy  
Treasurer: Brigitte Schaffer  
Secretary: Tracy Irvine  
National Representative: Mitchell Bagdon

**TORONTO CENTRE**

c/o Ontario Science Centre  
770 Don Mills Rd  
Toronto ON M3C 1T3  
416-724-7827 [416-724-STAR]  
www.rasc.ca/toronto

Honorary President: Dr. Roberto Abraham  
President: Ralph Chou  
Vice-President: Peter Hiscocks  
Vice-President: Paul Delaney  
Treasurer: Alexander Masterton  
Secretary: Tom Luton

**VANCOUVER CENTRE**

2302 West Fourth Avenue  
PO Box 19115  
Vancouver BC V6K 4R8  
rasc-vancouver.com  
president.rascvancouver@gmail.com

Honourary President: Dr. John MacDonald  
President: Leigh Cummings  
Treasurer: Bruce Hutchison  
Secretary: Scott McGillivray  
National Representative: Doug Montgomery



### VICTORIA CENTRE

c/o Sherry Buttner, President  
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Past President: Nelson Walker  
President: Sherry Buttner  
1st Vice-President: Joe Carr  
2nd Vice-President: Chris Purse  
Treasurer: Bruce Lane  
Secretary & Recorder: Joy Fisher  
Librarian: Michael Michaud  
Telescopes: Sid Sidhu  
National Representative: Lauri Roche  
*Skynews* Editor: Malcolm Scrimger  
Membership Co-ordinator: Chris Purse  
Webmaster: Joe Carr  
Observing Chair: Michel Michaud  
Jim Stillburn

### WINDSOR CENTRE

c/o Greg Mockler  
1508 Greenwood Road  
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Honorary President: Dr. William Baylis  
Past President: Rick Marion  
President: Randolph  
Groundwater  
1st Vice-President: Mike Mastronardi  
2nd Vice-President: Rick Marion  
Treasurer: Greg Mockler  
Secretary: Steven Pellarin  
National Representative: Mike Mastronardi

### WINNIPEG CENTRE

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Past President: Kris Keller  
President: Brenden Petracek  
Vice-President: Brian Renald  
Treasurer: Jay Anderson  
Secretary: Stan Runge  
National Representative: Dennis Lyons  
Councillors: Brian Stach  
Paul Trudel  
Kris Keller  
Silvia Graca

### YUKON CENTRE

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Email: yukonastronomicalsociety@gmail.com

President: Vikki Zsohsar  
Treasurer: Chris Lomas  
Secretary: Zarina Patoy

# 2018 AWARD WINNERS

<b>Ken Chilton Prize</b>	not awarded	<b>Chant Medal</b>	Peter Broughton (Toronto)
<b>Service Award</b>	Colleen O'Hare (Okanagan) Grant Rice (Okanagan) Brian Lucas (Sunshine Coast) Neil Sandy (Sunshine Coast)	<b>The Plaskett Medal</b>	Dr. Gwendolyn Eadie
<b>Fellowship Award</b>	Peter Jedicke (London)	<b>Simon Newcomb Award</b>	Nicole Mortillaro (Toronto)
		<b>Qilak Award</b>	Dr. Rob Thacker (Halifax) RASC Mike Moghadam (Ottawa) CASCA Daniel Brousseau (Sherbrooke) FAAQ

# 2017 CERTIFICATES

## ASTROIMAGING

Scott Barrie (Hamilton) Wide Field	Stuart Heggie (Toronto) Deep Sky	Tony Schellinck (Halifax) Deep Sky
David Chapman (Halifax) Wide Field	Blair MacDonald (Halifax) Deep Sky	Tony Schellinck (Halifax) Solar System
Art Cole (Halifax) Solar System	Stuart McNair (Toronto) Wide Field	Tony Schellinck (Halifax) Wide Field
Ian Doktor (Edmonton) Solar System	Dan Meek (Calgary) Deep Sky	Rick Stankiewicz (Unattached-Keene, Ontario) Wide Field
Jeff Donaldson (Halifax) Deep Sky	Kersti Meema (Toronto) Wide Field	Tenho Tuomi (Saskatoon) Wide Field
James Edgar (Regina) Wide Field	John Mirtle (Calgary) Deep Sky	
Dave Gamble (Okanagan) Deep Sky	John Mirtle (Calgary) Wide Field	
Michael Gatto (Halifax) Wide Field	Dave Newbury (St. John's) Deep Sky	

## DEEP-SKY GEMS OBSERVING PROGRAM

Melody Hamilton (Halifax)

## EXPLORE THE MOON

Judy Black (Halifax—Binocular)	Shane Grassing (Unattached—Pilot Butte, Saskatchewan—Telescope)
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## EXPLORE THE UNIVERSE

Maurice Goguen (Yukon)	Jeff Hiscock (St. John's)	George Pucula (Kitchener-Waterloo)
Shane Grassing (Unattached-Pilot Butte, Saskatchewan)	Vance Petriew (Regina)	Tony Schellinck (Halifax)
	Simon Poole (Calgary)	Michael Snair (Belleville)

## FINEST NGC

none awarded

## ISABEL WILLIAMSON LUNAR OBSERVING PROGRAM

Colin McKenzie (Vancouver)

## MESSIER OBJECTS

Mike Hengeveld (Vancouver)  
Pierre Schierle (Regina)

# 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](http://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)

## 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)
- 2015 Robert Dick (Ottawa)
- Dave Lane (Halifax)
- Dr. John Percy (Toronto)
- Mary Lou Whitehorne (Halifax)

- 2016 Jay Anderson (Winnipeg)
- Alan Batten (Victoria)
- Doug Hube (Edmonton)
- Franklin Loehde (Edmonton)
- Patrick Kelly (Halifax)
- 2017 none awarded

## 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)
- 2009 Brian Battersby (Prince George)
- 2010 Brian Battersby (Prince George)
- Lise Charlebois (Unattached)
- Ted Dunphy (New Brunswick)
- Paul Gray (New Brunswick)

- 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)
- 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)
- 2007 Dr. Frédéric Grandmont (Université Laval)
- 2008 Dr. Adam Muzzin (University of Toronto)
- 2009 Dr. Catherine Lovekin (Saint Mary's University)
- 2010 Dr. Helen Kirk (University of Victoria)
- 2011 Dr. Kaitlin Kratter (University of Toronto)

- 2012 Dr. Pier-Emmanuel Tremblay (Université de Montréal)
- 2013 Dr. Yasuhiro Hasegawa (McMaster University)
- 2014 Dr. Andrew Pon (University of Victoria)
- 2015 Dr. Anne Archibald (McGill University)
- 2016 Dr. Jonathan Gagné (Université de Montréal)
- 2017 Dr. Fereshteh Rajabin (Western University)



## 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) |      |                                  |
| 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 Trotter (Vancouver)          |      |                           |
| 2015 | Toronto Centre DDO Volunteers (Toronto) |      |                           |

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

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

## HONORARY MEMBERS OF THE RASC

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

## PAST 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	

### 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-	Colin Haig

### Secretaries

1999-2005	Kim Hay
2005-2007	Stan Runge
2007-2014	James Edgar
2014-2016	Dr. Karen Finstad
2016-	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-	Anthony Gucciardo

## GENERAL ASSEMBLIES—2001 TO 2018

*The following Centres hosted the General Assembly from 2001 to 2018:*

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

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

2019	Toronto - joint with AAVSO
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