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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

2013

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Front Cover Photograph  
by Barney DeSousa (Thunder Bay)

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# ROYAL ASTRONOMICAL SOCIETY OF CANADA—2014

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## Officers

|                                    |                     |  |
|------------------------------------|---------------------|--|
| Honorary President:                | Dr. John Percy      | <a href="mailto:john.percy@utoronto.ca">john.percy@utoronto.ca</a>             |
| President:                         | Glenn Hawley        | <a href="mailto:glennhawley@shaw.ca">glennhawley@shaw.ca</a>                   |
| 1st Vice-President:                | Colin Haig          | <a href="mailto:astronome@outlook.com">astronome@outlook.com</a>               |
| 2nd Vice-President:                | Dr. Chris Gainor    | <a href="mailto:cgainor@shaw.ca">cgainor@shaw.ca</a>                           |
| Secretary:                         | James Edgar         | <a href="mailto:james@jamesedgar.ca">james@jamesedgar.ca</a>                   |
| Treasurer:                         | Denis Grey          | <a href="mailto:denis.j.grey@gmail.com">denis.j.grey@gmail.com</a>             |
| Director:                          | Paul Gray           | <a href="mailto:snpgray@gmail.com">snpgray@gmail.com</a>                       |
|                                    | Craig Levine        | <a href="mailto:craigslevine@gmail.com">craigslevine@gmail.com</a>             |
|                                    | Dr. Paul Schumacher | <a href="mailto:docpschu@shaw.ca">docpschu@shaw.ca</a>                         |
| Past President:                    | Mary Lou Whitehorne | <a href="mailto:mlwhitehorne@hfx.eastlink.ca">mlwhitehorne@hfx.eastlink.ca</a> |
| Journal Editor:                    | Jay Anderson        | <a href="mailto:editor@rasc.ca">editor@rasc.ca</a>                             |
| Observer's Handbook Editor:        | Dave Chapman        | <a href="mailto:dave.chapman@ns.sympatico.ca">dave.chapman@ns.sympatico.ca</a> |
| Beginner's Observing Guide Editor: | Brenda Shaw         | <a href="mailto:brenda.m.shaw@gmail.com">brenda.m.shaw@gmail.com</a>           |
| Observer's Calendar Editor:        | Paul Gray           | <a href="mailto:snpgray@gmail.com">snpgray@gmail.com</a>                       |

## 2013 - 2014 Committees

|                                |                     |  |
|--------------------------------|---------------------|--|
| Awards:                        | Mary Lou Whitehorne | <a href="mailto:mlwhitehorne@hfx.eastlink.ca">mlwhitehorne@hfx.eastlink.ca</a> |
| Constitution:                  | Colin Haig          | <a href="mailto:astronome@outlook.com">astronome@outlook.com</a>               |
| Education and Public Outreach: | Robyn Foret         | <a href="mailto:arforet@shaw.ca">arforet@shaw.ca</a>                           |
| Finance:                       | Denis Grey          | <a href="mailto:denis.j.grey@gmail.com">denis.j.grey@gmail.com</a>             |
| History:                       | Randall Rosenfeld   | <a href="mailto:rosenfel@chass.utoronto.ca">rosenfel@chass.utoronto.ca</a>     |
| Information Technology:        | Ryan May            | <a href="mailto:ryanmay@telus.net">ryanmay@telus.net</a>                       |
| Light-Pollution Abatement:     | Robert Dick         | <a href="mailto:rdick@ccs.carleton.ca">rdick@ccs.carleton.ca</a>               |
| Membership and Development:    | Roland Dechesne     | <a href="mailto:dechesne@telusplanet.net">dechesne@telusplanet.net</a>         |
| Nominating:                    | Dr. Chris Gainor    | <a href="mailto:cgainor@shaw.ca">cgainor@shaw.ca</a>                           |
| Observing:                     | Chris Beckett       | <a href="mailto:cabeckett@gmail.com">cabeckett@gmail.com</a>                   |
| Publications:                  | Colin Haig          | <a href="mailto:astronome@outlook.com">astronome@outlook.com</a>               |

## Centre Representatives on National Advisory Council

|                     |                   |                 |                     |
|---------------------|-------------------|-----------------|---------------------|
| Belleville:         | Don Town          | Prince George:  | vacant              |
| Calgary:            | Heather Laird     | Québec:         | Pierre Desrosiers   |
| Calgary:            | Roger Nelson      | Regina:         | Peter Hagar         |
| Charlottetown:      | Mike Critchley    | St. John's:     | Marcellus Redmond   |
| Edmonton:           | vacant            | Sarnia:         | Joe Clements        |
| Halifax:            | Pat Kelly         | Saskatoon:      | Tenho Tuomi         |
| Hamilton:           | Mark Pickett      | Sunshine Coast: | Bill Clark          |
| Kingston:           | vacant            | Thunder Bay:    | Brendon Roy         |
| Kitchener-Waterloo: | Bernd Mueller     | Toronto:        | Eric Briggs         |
| London:             | Craig Levine      | Toronto:        | Rajesh Shukla       |
| Mississauga:        | Andrew Opala      | Toronto:        | Laila Zichmanis     |
| C. F. de Montréal:  | Patrice Scattolin | Vancouver:      | Doug Montgomery     |
| Montréal:           | Frank Tomaras     | Victoria:       | Mark Bohlman        |
| New Brunswick:      | Mandy Bregg       | Windsor:        | Michael Mastronardi |
| Niagara:            | vacant            | Winnipeg:       | Jennifer West       |
| Okanagan:           | Richard Christie  | Unattached:     | Raymond Auclair     |
| Ottawa:             | Rick Wagner       |                 | Randall Rosenfeld   |
| Ottawa:             | Bill Wagstaff     |                 |                     |



# PRESIDENT'S MESSAGE

## **Introduction:**

The newly constituted Board of Directors has almost had its first year of operations and the equally newly constituted National Advisory Council as well.

The Board has reviewed and renewed our Strategic Objectives for the coming years, and is in the process of revising and simplifying our Mission, Vision, and Values statements.

## **Society Office:**

Deborah Thompson continues to do an excellent job of running the “nuts and bolts” of the Society, with Renata Koziol as Office Administrator. As of this writing, we have not yet replaced our Marketing Coordinator, who has resigned to take up a position elsewhere.

## **Financials:**

Detailed in the Treasurer's Report is an increase in membership numbers, though a slight decrease in membership revenue occurred due to people taking advantage of the introduction of the Family memberships.

In part due to higher than anticipated investment revenues, a tidy profit is shown for the 2012-2013 fiscal year.

## **Governance:**

We are in a learning process as to how the new structure is operating, and there is a feeling that the Board should take a stronger role in ensuring that the Advisory Council has more clearly defined functions and duties.

The Chairs of the permanent Committees have been added to the NAC, as well as the Editors of our major publications. This, it is hoped, will provide better communications overall between the principal movers in the Society.

The Ontario government has not yet instituted the changes to its charitable organization laws, so harmonizing the Ontario Centres to both the province's requirements and those of the new RASC structure is moving slowly.

The Board is also instituting new supports for Centres, including assistance with setting up and operating Centre Web sites as well as an experiment in helping with marketing.

It is to be hoped that each year there will be a visit to each Centre from at least one Board member, something that had been proving impractical for just the President to accomplish even over two years. Hopefully this should improve communication between the Society and its Centres.

**Glenn Hawley**  
*President*

# SECRETARY'S MESSAGE

This is my last Secretary's Message, as I have announced my intention to step down from the position. It doesn't mean I'm leaving the Board, just changing direction.

Part of the duties is to receive and approve applications from Centres for the Public Speaker Program, along with the other two Trustees, Craig Levine and Bruce McCurdy. Last year was a huge success, as numerous Centres used the fund to good advantage. One particularly clever use of the program was by several Ontario Centres and the Montréal Centre when they brought David Levy "to town" for a seven-Centre speaking tour—well done!

The speakers and their topics are on the Web at [www.rasc.ca/psp-speakers-topics](http://www.rasc.ca/psp-speakers-topics)

We see a large jump in membership numbers in the table below, mainly as a result of bringing Associate Members into the fold as Family Members—a long-awaited and important change to our membership types.

We extend our condolences to the families and friends of the following deceased Members who passed away in 2013: Dr. John Vandermeulen (Halifax); Anthony Marano, Edmund Archambault (Niagara); John Peter Knight (Ottawa); Dr. Allan Pengelly, Gordon Anthony, Prof. Richard Jarrell (Toronto); Sally Baker (Vancouver)

**James Edgar**  
National Secretary

## Membership Statistics 2003-2013

| Centre             | 2013        | 2012        | 2011        | 2010        | 2009        | 2008        | 2007        | 2006        | 2005        | 2004        | 2003        |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Belleville         | 31          | 30          | 31          | 37          | 26          | 32          | 35          | 33          | 32          | 29          | 26          |
| Calgary            | 381         | 336         | 282         | 271         | 300         | 317         | 313         | 278         | 302         | 323         | 321         |
| Charlottetown      | 13          | 20          | 19          | 25          | 24          | 24          | 22          | 21          | 20          | 19          | 20          |
| Edmonton           | 277         | 229         | 235         | 260         | 257         | 258         | 255         | 241         | 261         | 267         | 271         |
| Halifax            | 169         | 153         | 154         | 159         | 155         | 157         | 162         | 152         | 171         | 197         | 214         |
| Hamilton           | 103         | 78          | 61          | 66          | 70          | 76          | 80          | 82          | 91          | 91          | 113         |
| Kingston           | 75          | 66          | 66          | 74          | 90          | 98          | 106         | 125         | 128         | 110         | 132         |
| Kitchener-Waterloo | 109         | 115         | 106         | 115         | 116         | 118         | 104         | 101         | 127         | 127         | 133         |
| London             | 110         | 126         | 104         | 118         | 97          | 101         | 104         | 99          | 112         | 115         | 119         |
| Mississauga        | 168         | 132         | 123         | 120         | 127         | 120         | 103         | 53          |             |             |             |
| C.F de Montréal    | 16          | 18          | 20          | 22          | 24          | 23          | 28          | 32          | 32          | 30          | 40          |
| Montréal           | 109         | 110         | 91          | 87          | 103         | 107         | 99          | 105         | 109         | 108         | 121         |
| New Brunswick      | 66          | 68          | 68          | 66          | 75          | 79          | 88          | 78          | 75          | 70          | 59          |
| Niagara            | 62          | 69          | 69          | 71          | 82          | 97          | 104         | 101         | 114         | 123         | 117         |
| Okanagan           | 115         | 106         | 92          | 116         | 103         | 88          | 86          | 85          | 83          | 85          | 92          |
| Ottawa             | 319         | 325         | 328         | 370         | 389         | 410         | 416         | 396         | 447         | 469         | 500         |
| Prince George      | 66          | 63          | 69          | 64          | 64          | 79          | 67          | 82          | 75          | 40          | 43          |
| Québec             | 16          | 20          | 19          | 17          | 17          | 35          | 44          | 40          | 39          | 38          | 38          |
| Regina             | 80          | 75          | 62          | 62          | 52          | 48          | 55          | 53          | 47          | 53          | 59          |
| St. John's         | 58          | 47          | 44          | 45          | 48          | 47          | 52          | 49          | 51          | 44          | 54          |
| Sarnia             | 12          | 11          | 15          | 15          | 19          | 24          | 25          | 27          | 27          | 32          | 26          |
| Saskatoon          | 68          | 70          | 70          | 72          | 71          | 71          | 78          | 76          | 70          | 67          | 73          |
| Sunshine Coast     | 43          | 32          | 38          | 35          | 32          |             |             |             |             |             |             |
| Thunder Bay        | 51          | 50          | 46          | 46          | 44          | 37          | 41          | 40          | 39          | 41          | 43          |
| Toronto            | 782         | 611         | 573         | 554         | 502         | 506         | 610         | 622         | 748         | 841         | 889         |
| Vancouver          | 198         | 226         | 228         | 244         | 251         | 263         | 256         | 238         | 267         | 291         | 313         |
| Victoria           | 176         | 163         | 164         | 166         | 185         | 173         | 188         | 177         | 186         | 192         | 200         |
| Windsor            | 84          | 90          | 100         | 96          | 96          | 98          | 94          | 89          | 105         | 122         | 125         |
| Winnipeg           | 210         | 178         | 180         | 168         | 162         | 169         | 157         | 136         | 132         | 140         | 136         |
| Unattached         | 428         | 446         | 419         | 434         | 459         | 530         | 561         | 512         | 538         | 591         | 610         |
| Honorary           | 15          | 15          | 14          | 11          | 15          | 15          | 14          | 15          | 15          | 14          | 14          |
| <b>Total</b>       | <b>4410</b> | <b>4062</b> | <b>3957</b> | <b>3995</b> | <b>4040</b> | <b>4216</b> | <b>4347</b> | <b>4138</b> | <b>4443</b> | <b>4655</b> | <b>4901</b> |

### Membership by Type

| Type     | Number | % of Total |
|----------|--------|------------|
| Ordinary | 3592   | 81.7       |
| Family   | 384    | 8.7        |
| Life     | 309    | 2.5        |
| Youth    | 110    | 2.5        |
| Honorary | (15)   | n/a        |

### Membership by Country

| Country | Number | % of Total |
|---------|--------|------------|
| Canada  | 4162   | 94.7       |
| USA     | 199    | 4.5        |
| Other   | 34     | .7         |

# TREASURER'S MESSAGE

The Society recorded an operating surplus in 2013 of \$57,807 on revenues of \$502,537 or 11.5%. Our revenue increased overall by \$40,737 over 2012 as a large return on our investments combined with a significant bequest offset reductions in most other sources of revenue.

Specifically, our investment portfolio returned to a more profitable state with an income of \$82,122 – an increase of \$43,918 from 2012's returns. Membership revenues were down slightly (\$2,591) and publications revenues from our Observer's Handbook and Observer's Calendar were down (\$9,225).

On the expense side, our management and volunteers are to be commended on their efforts to reduce our costs for the publication of the Handbook, Journal, and Calendar. Our Journal production costs, cost of goods sold, and freight costs were all very well managed in 2013, showing significant improvement over 2012 (combined decrease of \$19,675 in expenses).

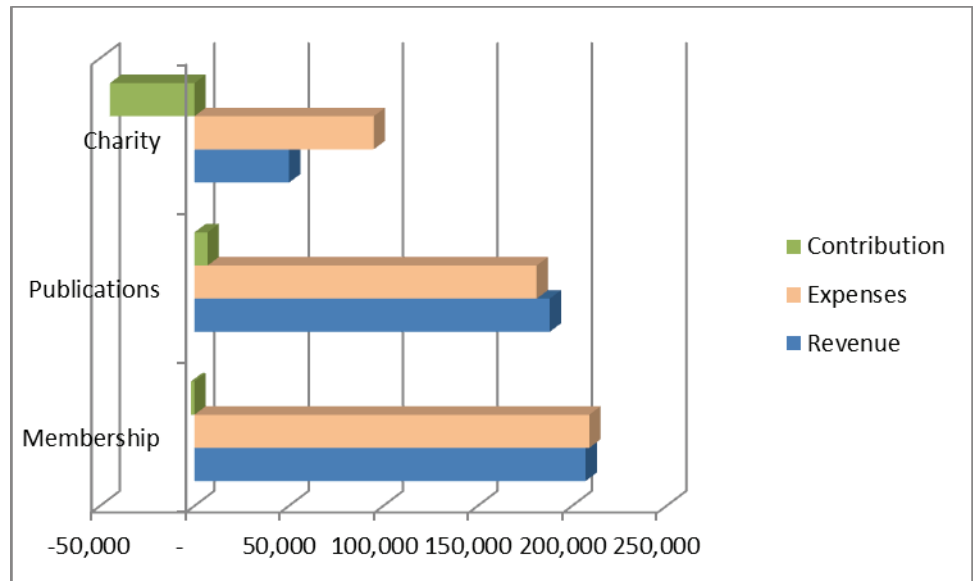
While the overall news for 2013 is good, close examination of the financial statements shows that without our windfall investment returns, we would have experienced a very different year. More work continues to be needed to sustain and grow our publications division in support of our charitable mandate.

Our 2013 budget is summarized below. Our Membership business segment is expected to run a small deficit which we hope to offset by new membership programs and the recently announced fee adjustment by the end of the year. It is important that our membership programs be self-sustaining and not be cross-subsidized by charitable revenue. The publications business is expected to make a positive contribution in 2013; however, this is dependent upon increased sales of our Observer's Calendar during an expanded selling season.

Our charitable programs are expected to run a deficit of approximately \$44,793, which represents a payout of donations received in prior years. The Society's charitable operations support the advancement of astronomy through various Society programs, including our publications, speaker's support, education and public outreach (EPO) programs, and other activities. Membership fees are expected to account for 46.5% of the Society's overall revenue in 2014, while publications will contribute 42.2% and charitable donations and investment income about 11.3%.

I would like to acknowledge the assistance of my fellow Board members, who are part of the Finance Committee, and Society staff in assisting me with carrying out this responsibility on behalf of the Society.

**Denis Grey**  
*Treasurer*



2014 Society Budget by Business Lines of Charity, Publications and Membership

# AUDITOR'S REPORT

## *Tinkham & Associates LLP* CHARTERED ACCOUNTANTS

*D C Tinkham, B Comm, CMC, FCA*  
*Associates*  
*P J Brocklesby, BBA CA*  
*M Tkachenko, BBA, CA*  
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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 2013 December 31 and the statements of revenue and expenditures, 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 2013 December 31, 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  
2014 March 23

*Tinkham & Associates LLP*  
CHARTERED ACCOUNTANTS  
LICENSED PUBLIC ACCOUNTANTS

# BALANCE SHEET

| As at December 31                         | 2013  | 2012                |
|---|---|---------------------|
| <b>Assets</b>                             |   |                     |
| Current                                   |   |                     |
| Cash                                      | \$ 96,212   | \$ 168,851          |
| Accounts receivable                       | 22,179  | 37,848              |
| Inventory                                 | 21,327  | 25,475              |
| Prepaid expenses                          | 10,020  | 12,987              |
|   | <b>149,738</b>  | <b>245,161</b>      |
| Long Term                                 |   |                     |
| Investments (note 4)                      | 1,102,550   | 1,009,665           |
| Capital assets (note 5)                   |   |                     |
| Tangible assets                           | 1,913   | 3,011               |
| Intangible assets                         | 47,451  | 9,802               |
|   | <b>\$ 1,301,670</b>                                   | <b>\$ 1,267,639</b> |
| <b>Liabilities</b>                        |   |                     |
| Current liabilities                       |   |                     |
| Accounts payable and accrued charges      | \$ 38,125   | \$ 51,348           |
| Deferred revenue                          |   |                     |
| Membership fees for ensuing years         | 105,963   | 107,351             |
| <i>Journal</i> subscriptions              | 15,224  | 22,693              |
| Unamortized life membership fees (note 6) | 32,225  | 33,921              |
|   | <b>191,537</b>  | <b>215,313</b>      |
| <b>Net Assets</b>                         |   |                     |
| Unrestricted                              | 644,120   | 620,984             |
| Internally restricted (note 8)            | 466,013   | 431,342             |
|   | <b>1,110,133</b>                                      | <b>1,052,326</b>    |
|   | <b>1,301,670</b>                                      | <b>\$ 1,267,639</b> |
| Commitment (note 7)                       | <i>See accompanying notes to financial statements</i> |                     |

On Behalf of the Board

President

Treasurer

# STATEMENT OF CHANGES IN NET ASSETS

|   | Internally<br>Restricted<br>(note 8) | Unrestricted | 2013         | 2012         |
|---|--------------------------------------|--------------|--------------|--------------|
| Year ended December 31                              |                                      |              |              |              |
| Balance, beginning of year                          | \$ 413,342                           | \$ 620,984   | \$ 1,052,326 | \$ 1,062,097 |
| Excess of expenditures over revenue<br>for the year |                                      | 57,807       | 57,807       | \$ (9,771)   |
| Transfers (Schedule 1)                              | 34,671                               | (34,671)     | -            | -            |
| Balance, end of year                                | \$ 466,013                           | \$ 644,120   | \$ 1,110,133 | \$ 1,052,326 |

*See accompanying notes to financial statements*



# STATEMENT OF REVENUE AND EXPENDITURE

| Year ended December 31                | 2013           | 2012           |
|---------------------------------------|----------------|----------------|
| <b>Revenue</b>                        |                |                |
| Membership fees                       | \$ 177,485     | \$ 180,076     |
| Publication revenue                   |                |                |
| <i>Observer's Handbook</i>            | 76,260         | 79,741         |
| <i>Observer's Calendar</i>            | 45,288         | 48,032         |
| <i>Journal</i>                        | 36,211         | 35,222         |
| Shipping and Handling                 | 28,078         | 30,816         |
| <i>Beginner's Observing Guide</i>     | 5,691          | 6,581          |
| Educational Aids                      | 2,170          | 7,076          |
| Other                                 | 1,163          | 1,248          |
|                                       | 194,861        | 208,716        |
| Miscellaneous income                  |                |                |
| Donations                             | 30,927         | 14,821         |
| Other income                          | 11,839         | 18,220         |
| Promotional products                  | 5,303          | 3,763          |
|                                       | 48,069         | 36,804         |
| Investment Income (net)               |                |                |
| Gain on investments                   | 61,071         | 13,312         |
| Interest and dividends                | 33,276         | 35,730         |
| Investment manager fees               | (12,225)       | (12,838)       |
|                                       | 82,122         | 36,204         |
| <b>Total Revenue</b>                  | <b>502,537</b> | <b>461,800</b> |
| <b>Expenditures</b>                   |                |                |
| Publication costs                     |                |                |
| <i>Journal</i>                        | 40,166         | 44,145         |
| Cost of publications sold             | 28,921         | 35,499         |
| Freight and handling costs            | 25,080         | 34,395         |
| <i>Observer's Handbook</i>            | 531            | 334            |
|                                       | 94,698         | 114,373        |
| Operating costs                       |                |                |
| Office salaries and employee benefits | 142,546        | 139,625        |
| Membership services                   | 72,401         | 68,205         |
| Services                              | 32,791         | 46,110         |
| Travel expenses                       | 24,319         | 23,784         |
| Office expenses                       | 23,406         | 24,769         |
| Committees                            | 20,233         | 26,005         |
| Occupancy                             | 17,779         | 17,541         |
| Advertising and marketing             | 6,479          | 6,451          |
| Amortization of capital assets        | 5,694          | 3,124          |
| Cost of promotional items sold        | 4,384          | 1,584          |
|                                       | 350,032        | 357,198        |
| <b>Total Expenditures</b>             | <b>444,730</b> | <b>471,571</b> |
| Excess of revenue over expenditures   | \$ 57,807      | \$ (9,771)     |

See accompanying notes to financial statements

# STATEMENT OF CASH FLOWS

| Year ended December 31                              | 2013              | 2012              |
|---|-------------------|-------------------|
| <b>Cash provided (used) by operating activities</b> |                   |                   |
| Excess of revenue over expenditures for the year    | \$ 57,807         | \$ (9,771)        |
| Charges not requiring a current cash payment        |                   |                   |
| Amortization of capital assets                      | 5,694             | 3,124             |
| Amortization of life membership fees                | (1,696)           | (1,785)           |
|   | <b>61,805</b>     | <b>(8,432)</b>    |
| Changes in non-cash working capital components      |                   |                   |
| Accounts receivable                                 | 15,669            | (9,890)           |
| Inventory   | 4,148             | 19,310            |
| Prepaid Expenses                                    | 2,967             | (2,102)           |
| Accounts payable and accrued liabilities            | (13,224)          | 18,123            |
| Deferred revenues                                   | (8,857)           | (171)             |
|   | <b>62,508</b>     | <b>16,838</b>     |
| <b>Cash provided (used) by investing activities</b> |                   |                   |
| Purchase of investments (net)                       | (92,884)          | (34,294)          |
| Purchase of capital assets                          | (42,263)          | (1,586)           |
|   | <b>(135,147)</b>  | <b>(35,880)</b>   |
| Increase (decrease) in cash during the year         | <b>(72,639)</b>   | <b>19,042</b>     |
| <b>Cash, beginning of year</b>                      | <b>\$ 168,851</b> | <b>\$ 187,893</b> |
| <b>Cash, end of year</b>                            | <b>\$ 96,212</b>  | <b>\$ 168,851</b> |

# NOTES TO FINANCIAL STATEMENTS

2013 December 31

## 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 organization 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 at fair value, which is based on quoted market values.

### (c) 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.

### (d) 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 2013, 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

### (e) 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 per Note 6. Five percent of the life membership fund is transferred at the beginning of each year to membership fees revenue.

#### (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.

### (f) 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

(g) 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.

(h) 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 ScotiaMcLeod 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 by the Society 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.

Total assets of the fund under administration by the Society at 2013 December 31 are \$134,441 (2012 - \$138,317) and are excluded from the Society's financial statements.

### 4. Investments

|   | 2013               | 2012                |
|---|--------------------|---------------------|
| Managed portfolio at Scotia McLeod              |                    |                     |
| Fixed income investments                        | \$ 554,190         | \$ 522,584          |
| Canadian equity investments                     | 398,110            | 360,628             |
| US equity investments                           | 127,917            | 97,512              |
| Cash  | 19,255             | 27,307              |
| Accrued interest and dividends receivable (net) | 3,078              | 1,634               |
|   | <b>\$1,102,550</b> | <b>\$ 1,009,665</b> |

The actively managed portfolio with ScotiaMcLeod includes 8 fixed income investments (2012—8 investments) comprised of government and corporate bonds with an average yield to maturities of 3.10% (2012 3.81%), stated interest rates ranging from 1.75% to 5.00% (2012 2.00% to 5.00%), maturing from 2015 September 8 to 2019 April 15 (2012—2013 June 15 to 2019 April 15).

The Canadian equity investments include share and trust units of 34 Canadian entities (2012—30 Canadian entities). The single largest holding is 359 shares of Toronto-Dominion Bank with a market value of \$35,939 (2011—490 shares of Royal Bank of Canada with a market value of \$29,341).

The U.S. equity investments include share and trust units of 24 entities (2012—20 entities). The single largest holding is 124 shares of J.P.Morgan Chase & Co. with a market value of \$7,252 US\$ (2012—119 shares of Marathon Pete Corp with a market value of \$7,497 US\$.)

The fixed income and equity investments have been recorded at market value based on information provided by ScotiaMcLeod.

## 5. Capital assets

|                          | 2013<br>Accumulated Cost<br>Amortization |           | 2012<br>Accumulated Cost<br>Amortization |          |
|--------------------------|--|-----------|--|----------|
| <b>Tangible Assets</b>   |  |           |  |          |
| Computer hardware        | \$ 8,157                                 | \$ 7,131  | \$ 8,157                                 | \$ 6,205 |
| Office furniture         | 1,542                                    | 638       | 1,542                                    | 484      |
| Library                  | 1  | -         | 1  | -        |
|                          | \$ 9,700                                 | \$ 7,769  | \$ 9,700                                 | \$ 6,689 |
| Net book value           |  | \$ 1,931  |  | \$ 3,011 |
| <b>Intangible assets</b> |  |           |  |          |
| Software                 | 61,593                                   | \$ 14,142 | 19,330                                   | 9,528    |
| Net book value           |  | \$ 47,451 |  | \$ 9,802 |

## 6. Unamortized life membership fees

|                                      | 2013      | 2012      |
|--------------------------------------|-----------|-----------|
| Life membership fees as of January 1 | \$ 33,921 | \$ 35,706 |
| Deduct: Amortization to income       | (1,696)   | (1,785)   |
| Balance, December 31                 | \$ 32,225 | \$ 33,921 |

## 7. Commitment

The Society has extended its existing lease agreement for office premises extending to 2015 February 28 with an option to renew for a further 3 year term. The minimum annual payments required under the lease, excluding an estimate of the proportionate share of property taxes, maintenance and insurance for the premises, in aggregate and for each of the next two fiscal years is as follows:

|      |           |
|------|-----------|
| 2014 | \$ 8,612  |
| 2015 | \$ 1,435  |
|      | \$ 10,047 |

## 8. 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 National Council. The P.M. Millman Endowment Fund was established for the purpose of providing for the long-term growth of the Society. The National Council segregated a significant donation received from the Estate of the late Walter Feibelman into a separate fund in 2005. The Public Speaker Programme 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 National Council, or are administered by trustees, who are appointed by and responsible to National Council.

| <b>Schedule 1: Internally Restricted Net Assets</b> |                                |                      |                           |                                   | 2013       | 2012       |
|---|--------------------------------|----------------------|---------------------------|-----------------------------------|------------|------------|
|   | Public Speaker<br>Program Fund | W. Feibelman<br>Fund | Ruth<br>Northcott<br>Fund | P.M. Millman<br>Endowment<br>Fund | Total      | Total      |
| Fund balance, January 1                             | \$ 12,380                      | \$ 62,550            | \$ 104,060                | \$ 252,352                        | \$ 431,342 | \$ 413,195 |
| Transferred from Unrestricted net assets:           |                                |                      |                           |                                   |            |            |
| Interest  | 975                            | 4,925                | 8,193                     | 19,869                            | 33,962     | 14,096     |
| Donations   | 3,264                          | -                    | 2,095                     | 295                               | 5,654      | 6,210      |
| Expenses  | (4,495)                        | -                    | -                         | -                                 | (4,495)    | (2,459)    |
|   | (706)                          | 4,925                | 10,288                    | 20,164                            | 34,671     | 17,847     |
| Balance, December 31                                | \$ 11,674                      | \$ 67,475            | \$ 114,348                | \$ 272,516                        | \$ 466,013 | \$ 413,495 |



## 9. 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. The financial instruments and the nature of the risks to which they may be subject are as follows:

| Financial instrument                 | Risks  |           |          |               |             |
|--------------------------------------|--------|-----------|----------|---------------|-------------|
|                                      | Credit | Liquidity | Currency | Market risk   |             |
|                                      |        |           |          | Interest rate | Other price |
| Cash                                 | X      |           |          | X             |             |
| Accounts receivable                  | X      |           |          |               |             |
| Investments                          | X      | X         | X        | X             | X           |
| Accounts payable and accrued charges |        | X         |          |               |             |

### 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 \$135,123 converted to Cdn\$ at 2013 December 31. The exchange rate used to convert US\$ assets at 2012 December 31 is \$1 US = \$1.0636 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—2013

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

Minutes of the Annual General Meeting held on Sunday, 2013 June 30 at 9:00 EDT at Lakehead University, Thunder Bay, Ontario.

### WELCOME AND INTRODUCTIONS

The meeting was called to order at 9:00 EDT by the Chair, RASC President Glenn Hawley, who welcomed members, delegates, and guests to the 2013 Annual General Meeting and thanked the Thunder Bay Centre for hosting the 2013 General Assembly. After introducing the Executive Committee, President Hawley called the roll of Centres—19 Centres were represented, and several Unattached Members and guests were present—approximately 76 in attendance.

### 1. MINUTES OF THE 2012 ANNUAL MEETING

MOTION AGM1301 Moved by James Edgar, seconded by Doug Montgomery, that the Minutes of AGM 2012 be adopted as presented in the Annual Report.

MOTION AGM1301 was CARRIED

### 2. Reports of Officers

#### President (Glenn Hawley)

Glenn spoke briefly about the turbulence in changing our governance model, which has been ongoing for several years. He had nothing further to add to his written report.

#### 1st Vice-President (Colin Haig)

Colin thanked several members of committees for the dedication and work carried throughout the year. He also thanked the Executive members for their work in the By-Law Roadshow, and for the hospitality shown by the Centres as we visited each, either in person or by electronic means.

#### 2nd Vice-President (Chris Gainor)

Chris briefly explained the work done by the Nominating Committee establishing a system of electronic voting for an election of Directors.

#### Secretary/Recorder (James Edgar)

James reported on the activities of the Public Speaker Program, where several clever people used the fund to innovate with a speaking tour of eight Centres by David Levy, where over 1350 people heard Dr. Levy speak on Discovering Comets. The Regina Centre recently completed a speaking tour with Wilderness Astronomer, Peter McMahon, where they established a first of visiting three Dark-Sky Preserves in three days.

James asked those present to stand and pause for a minute of silence to honour those Society members who had died in the previous year, naming: Richard Brain (Belleville); Dick Lowndes (Calgary); Richard Vanderberg (Halifax); Karl Moesch (Mississauga); Jose Ordenes (Sarnia); Susan Challenger Bolton, Terence Bowden, E. Clifton Carr, Fred Giles, Wolf Graf, (Prof.) Kimmo Innanen, Tony Sosnkowski, Kim Sprague, (Toronto); Geoffrey Burrett Jones (Victoria); Lindsay Price, Guy Westcott (Winnipeg)

#### Treasurer (Denis Grey)

Denis talked about the activities of the Finance Committee and our financial standing. He explained some of the wording of the auditor's report, where standard language describes their reluctance to report on our charitable work. Our revenues and expenditures are well under control. Denis answered questions from members about specifics of certain expenses. He thanked

Renata Koziol for all she does at the Society Office in keeping the financial records current.

MOTION AGM1302 Moved by Denis Grey, seconded by Ross Sinclair, that the audited financial statements be approved as submitted.

MOTION AGM1302 was CARRIED.

#### Executive Director (Deborah Thompson)

Deborah expressed thanks to everyone for the support shown to the Society Office staff. She was pleased that the new Family Membership has been instituted, so that previous Associate Members become full members of the Society.

### 3. Reports of Standing Committees

#### Awards

Awards (Mary Lou Whitehorne) No report.

#### Constitution (Colin Haig)

MOTION AGM1303 Moved by Colin Haig, seconded by Jim Hesser, that the Certificate of Continuance be accepted as presented.

MOTION AGM1303 was CARRIED

MOTION AGM1304 Moved by Colin Haig, seconded by Ralph Chou, that the new By-Law #1 be accepted as presented.

MOTION AGM1304 was CARRIED by Special Resolution

This was followed by a round of applause.

MOTION AGM1305 Moved by Colin Haig, seconded by Doug Montgomery, that the size of the Board of Directors be set at nine persons.

MOTION AGM1305 was CARRIED

#### Education (Ron Macnaughton)

Education (Ron Macnaughton) Ron spoke about the Canada-Wide Science Fair was held in Lethbridge this year, and he thanked Roland Dechesne for arranging judging at that event. Ron said his committee was working on a comet brochure.

#### Executive (Glenn Hawley)

Glenn said he was pleased with the state of the Society's finances, with publication sales improving over past years. He had nothing further to add to his written report..

#### Finance (Denis Grey)

No report

#### History (Randall Rosenfeld)

History (Randall Rosenfeld) Randall explained that the book *Cole of Spyglass Mountain*, recommended by David Levy, is now posted on the RASC Web site.

#### Membership & Promotion (Roland Dechesne)

No report.

#### Nominating (Chris Gainor)

Chris spoke about the nominating process for the Board, that our experiment was ongoing and would be creating much work for the committee over the next year.

#### Observing (Chris Beckett)

Chris congratulated the newest certificate winners. He also mentioned that he was joining the Light-Pollution Abatement Committee, to work with new Dark-Sky Preserves.

#### Publications (Colin Haig)

Colin explained that his committee has examined the shipping costs for the *Handbook*. He encouraged a round of applause for the work done by Dave Chapman and his team for the *Handbook*. Colin said that Brenda Shaw was well along in giving *The*

*Beginner's Observing Guide* a fresh look and he looks forward to seeing a draft in the next months. Colin asked for anyone with expertise on publishing electronically to help him with design of an e-book. Alan Whitman asked why we had to do a re-print of the *Handbook*. Deborah said it was because previously we had copies left over so we reduced our print run to 8000, and then we found we were short. So 500 more were printed in response to the brisk sales.

#### **4. Reports of Special Committees**

##### **Green-Laser Pointer (Randall Rosenfeld)**

Randall thanked the three presidents from previous years for their support of the committee. He commented that the guidelines we have produced are probably the best in the world, but that we have little support from Transport Canada in our efforts to get the pointers controlled. Randall suggested that the Society establish a plan to respond to any incidents with RASC members charged for improper use of a green-laser pointer. Rémi Lacasse suggested the most important thing we can do is get ministerial exemption for the use of GLPs.

##### **Information Technology (Ryan May)**

No further comments.

##### **Light-Pollution Abatement (Robert Dick)**

no report, except to announce that National Council passed motions establishing two new Dark-Sky Preserves, Wood Buffalo National Park and Frontenac County, in Ontario.

##### **5. Election of Auditor**

MOTION AGM1306 Moved by Denis Grey, seconded by Ralph Chou, that Tinkham, LLP, be appointed as Auditor for 2014.

MOTION AGM1306 was CARRIED

##### **6. Other Business**

Election results: Paul Gray, Paul Schumacher, and Francois von Heerden are the declared to be appointed to the Board Transition Committee.

##### **7. Adjournment**

MOTION AGM1307

Moved by Charles Darrow, that the meeting adjourn.

MOTION AGM1307 was CARRIED

The meeting adjourned at 11:00 EDT

##### **James Edgar**

*Recorder*

# ANNUAL REPORTS FROM THE CENTRES

## BELLEVILLE CENTRE

|           |  |
|-----------|--|
| January   | Observing reports<br>Video “Stephen Hawking’s Universe—Key to the Cosmos”  |
| February  | Observing reports<br>Greg Lisk’s meteorite collection<br>Speaker: Greg Lisk—“How a Star is Formed”   |
| March     | Observing reports<br>Comet Pan-STARRS observations<br>Upcoming AstroCATS in Oakville, Ontario<br>Upcoming Quinte Regional Science Fair<br>Requests for public observing at local retirement centre<br>Request for astronomy display at National Air Force Museum of Canada, CFB Trenton<br>Display of astronomy memorabilia at meeting |
| April     | Observing reports<br>Donald Town, National Council Rep. Report<br>Quinte Regional Science, April 6. Club donates four prizes.<br>Speaker: Robert Bates “Astrophotos”<br>Astronomy Day display at Quinte Mall and public observing later  |
| May       | Observing reports<br>Greg Lisk shows us his piece of the “Chelyabinsk meteorite” that blazed across the Russian sky on February 15.<br>Photos from last month’s local science fair   |
| June      | Observing reports<br>Several members attended David Levy’s June 3 presentation at Queen’s University, Kingston<br>Some members attended AstroCATS forum in Oakville May 25<br>Public presentation at Frink Centre for Grade 9 students.<br>Public talk to Grade 9s   |
| July      | Observing reports<br>Annual Star-BQ and observing at Presquile Park<br>Astro-News from last month  |
| August    | Observing reports<br>Starfest August 8-11—several members attended<br>Display at National Air Force Museum, Trenton—teletites, space memorabilia   |
| September | No meeting<br>Sept. 6-8—13th annual “Fall’n Stars” star party, joint Kingston/Belleville Centres event, held at Thomasburg, Ontario; approximately 30 in attendance.   |
| October   | Observing reports<br>Observing night: Oct. 25/26<br>Comet ISON discussion<br>Photos of this year’s Starfest  |
| November  | Observing reports<br>Observing night—Leonids meteor shower Nov. 16/17<br>Comet ISON update   |

December Observing reports  
Annual club Christmas dinner  
Comet ISON fizzles  
Observing night Dec. 13/14

**Joanne Burns**  
*Secretary*

## CALGARY CENTRE

Calgary Centre’s Public Outreach efforts reached a record number of the public in 2013 with event participation topping 17,000 for the year.

Calgary Centre continued to provide volunteers with telescopes for the University of Calgary Rothney Astrophysical Observatory’s monthly open houses. These open houses are well attended by the public and the Calgary Centre sets up an information table with insight into the RASC, our local programs for public outreach, and our work on light-pollution abatement. Highlights included excellent views of the Milky Way during two 3-day periods called Milky Way Nights in July and August.

Astronomy Programs with Parks Canada and Alberta Provincial Parks saw a rise in participation in 2013 with numerous park’s events held in Banff National Park, Rocky Mountain House National Park, Glenbow Ranch Provincial Park, and Fish Creek Provincial Park, to name a few.

RASC volunteers with telescopes also attended several other events; in Airdrie, supporting the Airdrie Space Science Club, and Vulcan, the home of the Star Trek Centre.

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

Several groups came out for tours of our Wilson Coulee Observatory with the highlight being the C-14 telescope in the dome.

Large Public events and new corporate events drove the Centre’s outreach to new levels this year. The Calgary Outdoor Adventure Show and Comic Con proved to be busy venues for the Centre’s booth, and event organizers in Banff have discovered the entertainment value of bringing RASC volunteers to corporate events in the picturesque town in the Rocky Mountains. The latter offered a new venue for public outreach as well as an opportunity to bolster the Centre’s coffers with much appreciated honoraria.

Rounding out the year, volunteers supported requests to augment programs of special interest groups; schools, Cubs, Scouts, Brownies, Girl Guides, and even ladies’ groups, to name a few.

### Other Activities

Special events included the Annual Awards Banquet in January and members’ barbeque at the Wilson Coulee Observatory (WCO) in June.

The Observing Group held monthly meetings at the WCO. The NOVA group for new observers also held monthly sessions at the

WCO and continued to be well attended. The revitalized Youth Group sessions held at the WCO are proving to be an attractive addition to the regular programs and the source of new Youth and Family memberships.

Social Media has proved to be a significant addition to the Centre's outreach portfolio (shout out to Roland Dechesne) with almost 5000 recorded views-hits-followers, *etc.*

The popular Telescopes-for-Rent program available to Centre members continues to be very successful and a more donated telescopes have been added to the program recently.

The annual Star-B-Q event was held at the Eccles Ranch Observatory site in central Alberta in July. The Alberta Star Party was held in September at a campground by the Red Deer River in Starland County near Drumheller.

The Centre newsletter, *The StarSeeker*, distributed electronically was published nine times in the year.

RASC Calgary Centre General meetings were held primarily at the Kirby Centre in downtown Calgary with Council meetings held at the University of Calgary

**Robyn Foret**  
*Secretary*

## CHARLOTTETOWN CENTRE

This year, we are celebrating the Silver Anniversary—25 years—of the formation of our Astronomy Club. In 1988, we began as a small but very interested group of astronomy enthusiasts that took to Astronomy and Space Science by storm and Halley's Comet was the fuse that lit the bug in all of us. Having watched Halley's come and go, the interest reached a peak as we took the bull by the horns and in the spring of 1988 had our first successful meeting ...and the rest is history...25 years of super participation by many dozens of people from all walks of life in PEI. All yearning to learn more about what takes place above our heads.

During this 25 years, in the year 2000, our club became a member of RASC after a highly anticipated visit by Randy Attwood; he informed us of the advantages of belonging to RASC. His comments led to many splendid, educational years with an equally enthusiastic group of amateur and professional Astronomers. I personally have attended four AGMs, which really is the main event, when you hear and see the noted speakers that RASC has attracted.

Our year began with a dedicated list of objectives/tasks to accomplish as the year progressed—something eventful for each and every part of the year. But as the year unfolded, we found our numbers dwindling, particularly of the ladies. For several reasons, all unique as presented, their situations were such that made it impossible for them to continue. Our male membership stayed pat, but for each of the first four months, attendance at meetings varied from 10 to 13; May and June 7 & 5.

However, we were able to produce as one of our projects a beautiful Anniversary T-shirt and ball cap with a logo designed exclusively by Barry Bain. This sold very well as most members purchased. The other projects as planned did not come to fruition. Astronomy Day was cancelled because of a late snowstorm (April 13). It was planned to observe a fall event of the like that did not occur. We ordered 22 calendars of which we were left with 7-8 unsold. Earth Hour was a wash out with cloudy weather all night.

However, we continue to draw sizable crowds at our observing night—Saturday—which runs on the weekend before our planned meeting night. We will draw on the popularity of this session to attract new members for 2014.

Now all this is happening with the prospect of the University of PEI—where we have been since the formation of our club—threatening to evict us from the campus entirely. A “new generation” of Administration/Financial personnel were of the conviction that we should be a paying organization because of having no linkage—students/faculty, *etc.*—with the institution. In spite of our group donating, for the past 20 years, a \$200 bursary to a deserving student going on in the Astronomy/Physics field. This obviously did not bear much impact with these people. This situation was finally ironed out, in the fall, with our friends in the Astronomy/Physics Dept., but eviction was an ominous threat hanging over our heads for the better part of two years. We are now allowed to stay but have to change our meeting night to one through the week when students are in classrooms/labs in the evenings.

In 2014, we plan to use the knowledge gained from our non-productive year, plus our past successful years, to push on and lure those potential members to our meetings. The Saturday observing sessions is a great starting point. It will be a great year.

**Clair Perry**  
*President*

## EDMONTON CENTRE

The Edmonton Centre had a full year of activities, with not just regular meetings with an excellent list of speakers, but also many observing, public service, and outreach activities.

Our regular meetings are open to the public and are tending to draw more guests as time goes by. Our special speakers included:

- Greg Sivakoff, Physics Department, U of A:  
Citizen Astronomer Monitoring of SS Cygni;
- Jeanette Gladstone, Physics Department, U of A:  
Searching for the black hole missing-link;
- Valeri Frolov, Killam Memorial Chair and Professor, Physics Dept., U of A  
Black Hole Concept;
- Alan Dyer, Astronomer/Digistar Programmer:  
The Amazing Sky;
- Mathieu Dumberry, U of A:  
The days are getting longer!
- Stefan Cartledge, MacEwan University  
The Search for Exoplanets: Are we Alone in the Universe?
- Gordon Freeman, U of A:  
Fine Science and Fine Art on the Prairie 5200 years ago, in a Calendar;
- Natasha Ivanova, U of A:  
Life in pairs, Binary Stars.

Our outreach activities included:

- Astronomy Day 2013, Saturday, Apr 20:  
The RASCEC Observatory and the TELUS World of Science Edmonton presented International Astronomy Day on April 20.
- 2013 Sidewalk Astronomy:  
Sidewalk astronomy was difficult this year as the skies did not cooperate. Both Friday and Saturday were mainly cloudy,



but Sunday evening proved to be very nice so thanks to Larry Wood and Murray Paulson, two locations had sidewalk astronomy.

- Edmonton Comic & Entertainment Expo, Sep 28-29: The Edmonton Centre attended the 2013 Edmonton Expo as an exhibitor. President Ross Sinclair said "Expo was pretty cool...we had a great location. Gave away a tonne of swag and info. I think we were the only booth there not selling something.
- Jasper Dark Sky Festival, Oct 25 - 27: The sky took centre stage at the Jasper Dark Sky Festival, October 25- 27. The Edmonton Centre participated in the festival with 15+ volunteer astronomers. The weather was outstanding for Friday, Oct 26 and the public star gazing on the shores of Lake Annette.
- George Pegg Gardens Outreach with RASCEC, Nov 8: Three RASCALS attended a public demonstration for the George Pegg Botanical Garden at Onaway, Alberta. Thirty some people enjoyed an indoor demonstration of telescope equipment and then the sky magically cleared for some viewing.

Edmonton Centre's activities also extend to providing major sponsorship to formal education activities.

We are a very significant contributor to the SkyScan project, whereby we contributed dollars to a program of astronomical education in Edmonton and area elementary and junior high schools. For the 2013/2014 school year, 114 schools have registered for the program. The members of RASCEC have contributed over 850 hours of their time since the program inception in 2011, the University of Alberta provides a graduate teaching assistant and the use of its new observatory on the U of A campus. The Natural Science and Engineering Research Council of Canada has provided approximately the same dollar figure as RASCEC towards this very valuable educational program.

We provide scholarship funds for several areas: for students to attend various symposia and bursaries for students in the astrophysical sciences.

In all, 2013 has been a busy year and, finally, we would like to thank our Fundraising Coordinator, Franklin Loehde, who is stepping down after a lifetime of filling that position. None of the projects we've listed above would have been possible without his enduring and enthusiastic commitment. As an aside, we're pretty sure Franklin holds the current record for long service in the whole of RASC. (And if you think differently, we'd like you to keep it to yourself; Franklin's a gem.)

**Kent Martens**  
*Secretary*

# HALIFAX

## CENTRE

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

### General Meetings

Monthly meetings are held generally on the third Friday of each month, except for the summer months, providing 10 monthly meetings this year. The Executive meets in the hour prior to the main meeting to discuss Centre business. These meetings are held in facilities provided by Saint Mary's University. The Centre's library cart, which contains a selection of books on astronomy subjects, is available to members at each meeting. The meeting opens with a poem related to astronomy selected, or written, by our President Paul Heath "...to open our hearts and minds...", then the evening's main presentation with Centre business and a What's Up by our Observing Chair Sean Dzafovic following. Refreshments and discussion follows the formal meeting.

The Halifax Centre continued hosting a series of speakers at each monthly meeting who gave interesting and informative presentations. Meeting attendance varies from approximately 30 into the 40s, depending on weather conditions. Presentations included:

|           |  |
|-----------|--|
| January   | Dr. Michael Palmer gave a presentation on "Star Formation in Merging Galaxies";  |
| February  | Mary Lou Whitehorne gave a presentation titled "The Big Eclipse Gamble", a traveller's tale of chasing the elusive total eclipse;  |
| March     | Dr. David Turner spoke on the "Origins of the Constellations, and why Ursa Major does not look like a Bear!";  |
| April     | Speaker Professor Robert Deupree, the director of Computational Astrophysics of Saint Mary's University, spoke on RR Lyrae Variable Stars;   |
| May       | member's night with a variety of topics;   |
| June      | We met at St. Croix Observatory for a social meeting at our observatory;   |
| September | Dr. Dave Turner spoke about variable stars, their observation, and his involvement with the AAVSO (American Association of Variable Star Observers);                                     |
| October   | Art Cole did a presentation on his iPhone photography and his trip to Mt. Wilson;  |
| November  | a presentation by our latest supernova discoverer, Nathan Gray; then a talk by Jeff Donaldson on his Belt of Orion Observatory (BOO); and a talk by Chris Young "One Sky, Many Stories"; |
| December  | Our AGM followed by our quiz show "Who wants to be a Gazer?"   |

All in all, we had a good mix of subjects and captivating speakers.

### Centre Newsletter NOVA NOTES

*Nova Notes* continued in its regular format throughout 2013, edited by Quinn Smith. It was primarily delivered in an electronic format through the Halifax Centre Web site, with paper copies mailed out to those who have subscribed. The newsletter contains articles, photos, astrophotos, poetry, meeting write-ups—all by Centre members. There were a total of 5 editions published in

2013; February, April, June/July, September/October, and December. Publication will carry on through 2014.

### **Public Outreach**

Along with the public observing sessions that have taken place in Halifax, many members have hosted their own observing session within their local communities.

The Halifax Centre has continued to support the Halifax Planetarium, and several of our members have given shows throughout the year. Stephen Payne of the Dalhousie Department of Physics, who runs the planetarium, reports attendance between 2500 and 3000 visitors this year.

### **Nova East Star Party, Smileys Provincial Park**

This year Nova East, Atlantic Canada's regional star party, was a very special one, not only for its excellent guest speakers, Dr Luigi Gallo, but also because it was again hurricane free. The success is due to the hard work of the Nova East Organizing Committee, Blair MacDonald, Quinn Smith, Minas Astronomy Group, and the Smileys Provincial Park Staff.

### **Dark-Sky Preserve Support**

The Centre has also supported Kejimikujik National Park and Historic Site, which has been a Dark-Sky Preserve since 2010. This summer, Dave Chapman of the Centre helped facilitate the Dark-Sky Weekend, with presentations, talks, observing sessions by Centre members, and guests from the Winnipeg Centre and Keji Parks Canada staff. Parks Canada has worked hard to sustain and enhance Kejimikujik National park in maintaining its Dark-Sky Preserve certification.

### **Goals for 2014**

Halifax was fortunate to be chosen for the 2015 GA and work is well under way with its co-chairs Quinn Smith and Pat Kelly and the GA Committee. For the coming year, the Centre has committed to carry on many of the public outreach programs provided in 2013. The Halifax Centre, with the drive and dedication of its members, will continue the sidewalk observing sessions, library talks, provide presenters for the planetarium, support Kejimikujik National Park, and maintain the Astronomy Nova Scotia Web site, which provides easy access to all astronomy event information in Nova Scotia.

### **Chris Young**

*Secretary*

# HAMILTON

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## CENTRE

The Hamilton Centre had a very active and successful year. Our Outreach program engaged the public in many locations with many stargazing evenings at our Chilton Observatory. The NOVA course was rejuvenated and our new activities with AstroCATS and Henry's were very successful. On top of that we had many interesting speakers at our monthly meetings and a fun evening at our annual banquet. The club Web site has been very active and our monthly newsletter, Orbit, has been well received.

Some of our key activities were:

### **Henry's Astrophotography**

An outreach program provided through the Henry's chain of camera stores that provides an introduction to astro-imaging entitled Astrophotography 101. In 2013, 10 classes took place in several locations resulting in 48 new RASC memberships.

### **AstroCATS**

On May 25 & 26, Hamilton Centre hosted the 1st annual Canadian Astronomy Telescope Show (AstroCATS). A full-blown, 2-day astronomy trade show complete with exhibitors from around the world, seminars and keynote speakers.

The event was designed to serve a number of objectives: a fun event for amateur astronomers and their families, as well as a fundraiser for RASC Hamilton outreach programs. This was very well attended (many hundreds!) and everyone, including volunteers, had a fabulous time.

### **Loaner Scopes**

- Three 200-mm Dobsonian scopes were purchased and are available for loan to members
- So far, we have lent to 16 people for one month each (or more)
- A 150-mm refractor was donated to the club, so we bought a used mount and a new eyepiece, and is now part of our group of loaner scopes.

### **Westfield Heritage Village**

- We have two antique telescopes and one mount at Westfield Heritage Village
- At certain times, we use them to show the public the night sky
- The weather was bad for two events, but we did about 4 or 5 nights in total
- We are planning to build a "1910-style" observatory in the next year

### **Sidewalk Astronomy and Outreach**

- We have started again, with large "box-store" parking lots, rather than parks, as our focus
- We have about 10-12 sessions a year now
- We also have a monthly public stargazing evening at the club's Chilton Observatory
- We have also engaged with the local Scout and Guide groups for observing evenings at the observatory.

### **Bill Leggitt**

*Treasurer*

# KINGSTON

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## CENTRE

The Kingston Centre had a very busy year and included 8 regular meetings, 4 Executive Board meetings, a meeting with RASC officials regarding the upcoming changes to the By-Laws and Membership Status. We assisted in 9 Kingston Astronomy Outreach Network (KAON) sessions with Queen's University. There were side trips by various members and we took on a building shed project, and the lease of a 16-inch Cassegrain Telescope.

This year we dabbled in the use of the Internet for our meetings using Anymeeting.com. These were open to the public. This was a learning curve with the use of video cameras and audio, and the program function itself. We observed several other Centres were venturing into this realm, and the GA's use of Google+ for their open meeting. We are looking for a better method to broadcast our meetings to a wider audience, and new programs.

### Meeting Summary:

January we had guest Speaker Nathalie Ouellette who spoke on Nature vs. Nurture—the Role of the Cluster Environment in Galaxy Growth.

February with a member's night.

March meeting was a video conference with Tom Field, who is a contributing editor for *Sky & Telescope* and author of RSpec (www.rspec-astro.com), who spoke to us on Spectroscopy.

In April, we had a viewing session planned at Elbow Lake in place of the meeting due to exam's at Queen's University but this was cancelled due to inclement weather.

May brought the move to a new/old room (MacCorry B201), due to Queen's University renovating the rooms in Ellis Hall. The Room 324 will not be ready until January 2014. This was a member's night as well.

In June, we and the public were treated with a talk by Dr. David Levy. Kingston was a stop on the multi-Centre tour, which was arranged by Randy Attwood, through support of the Public Speaker Program.

June meeting consisted of a telescope workshop and the Torus Project Update.

We were off for the July and August meetings.

September had us come back together to talk about our summer observing sessions and astronomy projects.

October we had a video on Light Pollution and Responsible Lighting – City Dark and then had a discussion on the movie and the lighting improvements in Kingston. The city is replacing all lighting with full-cutoff LED lighting.

November is our Annual Meeting with the President, Vice-President, and Treasurer positions open. After is a regular member's meeting.

December we gather and enjoy our Annual Dinner at Aunt Lucy's.

We are hoping to be back in our regular room (Ellis Hall Room 324) in January 2014.

### Special Events

In late May, the Kingston Centre transported the 16-inch telescope to its temporary location and assembled it. The previous year saw construction of the roll-off building observatory for this project. There was power and Internet brought out to the observatory. Throughout the summer, there were various tweaking

projects, and in late October, the primary and secondary mirrors were cleaned, and reassembled. We are now waiting to collimate the mirrors, which will be done by the end of November. Next will be the work on the CCD with the telescope. We may possibly have to recoat the mirror. That will be a 2014 project. After the June 3 meeting with David Levy, member Susan Gagnon and Terence Dickenson went observing at the Lennox and Addington Dark-Sky Preserve.

Mid-June saw the building of a storage shed to house all the Centre's assets, thus removing them from members' homes. This allowed easier access and is important for auditing purposes.

August 3 was the official opening of the North Frontenac Dark-Sky Preserve. The RASC-KC is a supporter of this project. There is a cement pad with electrical, washroom facilities, and parking. What is needed is more trees/shrubs on the eastern side to block oncoming traffic. Some education is needed for those who use computers at the site to block the light from the screens, so this does not affect others' night vision.

August 29, Susan Gagnon and Rick Wagner attended the Lennox & Addington Dark-Sky Preserve to see Terence Dickinson receive the Lennox & Addington Life Time Achievement Award for his work in Astronomy and the spearheading of the Dark-Sky Preserve project.

November 3 saw several members brave the cold and the clouds to watch the partial solar eclipse. The clouds cleared enough to see the trailing end of the eclipse.

November 8 had a members' observing night at a member's home. It has been a long time since we have done this, and it was a clear night and well received. Many are looking forward to the next one.

**Kim Hay**  
*President*

# KITCHENER-WATERLOO

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## CENTRE

|          |  |
|----------|--|
| January  | General Meeting: Star Party in the Black Forest by Bernd Mueller;<br>Stargazers 101: Ursa Major by Jim Goetz, Observing Sirius B by Clark Muir, What's Up by Serge Mammoliti   |
| February | General Meeting: Astrophotography Contest; Hubble Deep Field by Jim Goetz; David Jenkins awarded an observing certificate;<br>Stargazers 101: How I Built a Dob by Dave Urbshas  |
| March    | General Meeting: Comet PanSTARRS by Rick Burke;<br>Stargazers 101: Deep Sky Wonders by Chris Beckett;<br>Alcohol and Astronomy by Randall Rosenfeld; Annual Dinner   |
| April    | General Meeting: Light Pollution by Peter Hiscock;<br>AstroCATS by Andy Blanchard;<br>Stargazers 101: 11 Spring Observing Highlights by Clark Muir; Dew and Astronomy by Mike Renner;<br>Star Party: Waterloo Park, 20 people attended                                 |
| May      | General Meeting: Galaxies by Gerry Bissett; BOINC by Jim Goetz;<br>Stargazers 101: Favourite Astronomy Web sites and Software Demonstrations by Brian Hollander; 10" Dobsonian Modifications by Tim Spiegelburg;<br>Star Party - YMCA Camp, Paradise Lake, 60 students |

# LONDON

## CENTRE

London Centre had a busy year in 2013 with Public Outreach Coordinator Dave McCarter involving members with many events at schools, libraries, and campgrounds. Higher Education Liaison Robert Duff maintained our very active presence at the Hume Cronyn Observatory on Western University campus. London Centre Treasurer Bill Gardner conducted a week-long program at the Killarney Provincial Park Observatory, July 8-12.

London Centre member Gaetan Godin conducted 3 outreach events hosted at Summer House Park on Miller Lake on the Bruce Peninsula near Tobermory and Bruce Peninsula National Park, August 1, 7 and 8. In all, London Centre members took part in 109 public outreach events with 4,568 members of the public in attendance. If we include Bill Gardner's 5 star nights at Killarney Provincial Park Observatory, with its 25.4-cm Schmidt-Cassegrain telescope, July 8-12, this brings the number to 114 events.

There were 28 London Centre members who participated in one or more of all public outreach events in the London region, including London Centre Star Nights, Cronyn Observatory Open Houses, Exploring the Stars and Astronomy 1021 Student Projects at the Cronyn Observatory are listed as follows, roughly in order of frequency of attendance: Dave McCarter, Everett Clark, Harold Tutt, Robert Duff, Dale Armstrong, Peter Jedicke, Steve Gauthier, Mike Roffey, Gaetan Godin, Rob McNeil, Matt Neima, Roman Dubinski, Steve Imrie, Maria Lavdas, Dan Tremblay, Patrick Whelan, Dale Armstrong, Jon Gunning, Jeff Harrison, Richard Henderson, Dianne Jedicke, Chris Fleming, Harold Tutt, Craig Levine, Joe O'Neil, Pete Raine, Rick Saunders, Mike Jager. If we include Bill Gardner who conducted [5 (?)] star nights at the Killarney Provincial Park Observatory 25.4-cm Schmidt-Cassegrain (SCT) July 8-12, this would bring the total number of members involved in public outreach events to 29.

The above list does not include three members who attended one or more slide presentations in the Cronyn Observatory without assisting in the dome, including Richard Gibbens, Chris Evans, and Suzie Chelico (who also viewed through London Centre's 25.4-cm Dobsonian, October 8).

Educational materials distributed at the Cronyn Observatory mostly for Exploring the Stars events and some at Cronyn Observatory Open Houses included: 339+ Star Finders, 114+ Moon Gazers' Guides, 33 Mary Lou's New Telescope, and 29 Secrets of the Night Sky sky charts (Canadian Space Agency).

### London Centre Outreach 2013

London Centre participated in 20 public outreach events, including star nights and slide presentations, January 16-October 28. A total of 888 members of the public participated in these events. There were 23 London Centre members with a total Member Participation Rate of 81, giving us a Centre Members Participating / Participation Rate = 23 / 81. A total of 20 amateur telescopes were used giving us an Amateur Telescopes Used / Usage Rate = 20 / 58. Public Outreach Coordinator, Dave McCarter attended 20 events, including making 17 slide presentations.

The 23 RASC London Centre members who participated in these public outreach events, with or without a telescope are listed as follows in order of frequency of attendance: Dave McCarter, Everett Clark, Harold Tutt, Robert Duff, Peter Jedicke, Mike Roffey, Gaetan Godin, Rob McNeil, Matt Neima, Roman Dubinski, Steve Imrie, Maria Lavdas, Dan Tremblay, Patrick Whelan, Dale Armstrong, Jon Gunning,

- June General Meeting: Shooting Orion Through the Clouds by Brian Hollander;  
Stargazers 101: Sketching Saturn and the Milky Way by Risa Horowitz; June Spectacular by Clark Muir;  
What's Up by Serge Mammoliti; KW RASC with University of Waterloo presented David Levy and his "A Night Watchman's Journey;" 280 people attended  
Ray Koenig Award presented to Clark Muir; Facebook Page started
- July Stargazers 101: Star Party at Conestogo Lake, 40 people attended; Star Party at Tilkers - Perimeter Institute Science Program, 40 students attended; Facebook Group started
- August Stargazers 101: Star Party at Conestogo Lake, 10 people attended
- September General Meeting: Dust by Steve Holmes;  
Stargazers 101 - Deep-Sky Astronomy Images by Steve Holmes; Camelopardalis by Jim Goetz;  
Star Party: YMCA Camp, Paradise Lake, 64 students
- October General Meeting: Dark Energy and the HETDEX Experiment by Wayne Joslin;  
Stargazers 101: The Hobbit; Making an Ultra-Short Focal Length 12" Telescope by Peter Pekur; The Great September Comet of 1882 by Clark Muir;  
Star Party: YMCA Camp, Paradise Lake, 50 students;  
Atacama Astronomy Trip - Club members who went on the trip: Jim Goetz, Gerry Bissett, Rosanna Rigo
- November General Meeting: Comets by Ron Macnaught;  
Stargazers 101: Tour of the Universe by Phil Lacasse;  
What's Up by Serge Mammoliti;  
Star Party at Wilfred Laurier University, 20 people attended
- December General Meeting: Atacama Trip by Gerry Bissett;  
Annual General Meeting, What's Up with Serge Mammoliti;  
Stargazers 101: Lunar Imaging Project by Daryl Archer; Comet ISON Aftermath by Clark Muir; What's Up by Serge Mammoliti  
Scouting Outreach: Phil Lacasse;  
School Outreach: George Peer talked to 430 Grade 6 students.;  
The Tilkers observing site was used extensively throughout the year.

Stargazers 101 is a meeting directed at people who are just starting out in astronomy.

**Jim Goetz**  
*Secretary*



Jeff Harrison, Richard Henderson, Dianne Jedicke, Craig Levine, Joe O'Neil, Pete Raine, and Rick Saunders.

### **Killarney Star Nights, July 8-12**

Bill Gardner did something really different for July 2013—instead of a one-night event, he planned a week-long series of day and night events, calling it the Killarney Astronomer in Residence, using the 25.4-cm SCT. Bill outlined his program in the poster “Killarney Astronomer in Residence” accompanying his announcement on the Centre’s Public Outreach Forum. The series began on July 8 with an evening of “The Skies at Killarney—Presentation and Sky Viewing at Killarney Provincial Park Observatory”; July 9, morning solar viewing (if clear) at the nature centre; and an evening visit with KAIR as the observatory is used to automatically collect data for modern astrophotography (Bring all your questions and discuss matters of astronomy with KAIR); July 10, afternoon of “Spectroscopy – Learning about Our Universe through Light” at the Amphitheatre followed by Solar viewing and, evening, sign up for training session on use of the Killarney Provincial Park Observatory; July 11, morning solar viewing at the nature centre and an evening visit with KAIR; July 12, evening training session on use of the SCT.

### **Public Star Nights – Miller Lake, August 1-8**

Gaetan Godin conducted the three outreach events in early August, as mentioned above. He was assisted by one non-RASC member with a borrowed 12-inch (30.5cm) Dobsonian telescope, which he did not know how to use very well. Gaetan assisted him with collimation and a few suggestions. There was thus one Centre member for three outreach events with a Total Member Participation Rate = 3. There was one Centre member’s telescope for a London Amateur Telescopes Used / Usage Rate = 1 / 3. There was also 1 borrowed telescope brought by an inexperienced non-RASC member used on 2 nights. A total of 82 Members of the Public attended these 3 events.

### **Public Outreach at Western University’s Cronyn Observatory**

There were 18 Saturday Evening Summer Open Houses May 4-August 31 at the Hume Cronyn Observatory at Western University, involving 1,266 visitors, not including 3 firemen and 1 police officer who viewed Jupiter through the 25.4-cm refractor in the dome during a fire inspection at the May 4th Cronyn Observatory Open House. There were 10 Centre members participating in one or more of these events, including eight who assisted the graduate students in the dome and two who listened to the lecture.

The eight Centre members who assisted in the dome and with amateur telescopes included, in order of frequency of attendance: Dale Armstrong, Robert Duff, Everett Clark, Peter Jedicke, Steve Gauthier, Steve Imrie, Dave McCarter, and Rob McNeil. The two who listened to the slide lecture were, in order of frequency of attendance, Richard Gibbens and Chris Evans.

There were a total of 8 “Star Finder” planispheres, 8 “Moon Gazers’ Guide” cards distributed at the Saturday, May 25, June 15, and July 20 at Cronyn Observatory Open Houses. In addition, 33 “Moon Gazers’ Guide” cards were distributed at the Banting House Moon night, Monday, July 15.

Four Open Houses on the second Saturday of each month at Western University’s Hume Cronyn Observatory, January 12-April 13, which involved 237 visitors. There were four Centre members who took part in these events for a Members Participating / Participation Rate = 4 / 9. There was one amateur telescope used, the Centre’s 25.4cm Dobsonian for an Amateur Telescope Used / Usage Rate = 1 / 3.

The four Centre members who assisted in the dome and with amateur telescopes included, in order of frequency of attendance: Peter Jedicke, Robert Duff, Chris Fleming, and Dave McCarter.

Some Star Finders, Moon Gazers’ Guide cards and five copies of the book *Mary Lou’s New Telescope* were distributed at the April 13 Open House.

There were four Cronyn Observatory Saturday Public Nights September 14-December 14, involving 269 visitors. Eleven Centre members participated in one or more of these events

The ten Centre members who assisted in the dome and with amateur telescopes included, in order of frequency of attendance: Robert Duff, Everett Clark, Peter Jedicke, Dale Armstrong, Steve Gauthier, Steve Imrie, Mike Jager, Dave McCarter, Rob McNeil, and Harold Tutt. Richard Gibbens is recorded attending one event, listening to the slide lecture, November 9.

There were 3 Star Finders distributed on Saturday, October 12.

Exploring the Stars is a public outreach program organized by Western University’s Physics and Astronomy Department in cooperation with the London Centre and conducted by graduate students at the Hume Cronyn Observatory on campus. It offers educational opportunities to elementary and secondary schools, Scouts, Guides, and various other youth and adult groups. An Exploring the Stars event involves a slide presentation (and sometimes an activity) by a graduate student on a topic selected by the group and this is followed by observing through the big 25.4-cm refractor in the dome. Centre members set up one or more amateur telescopes on the observatory’s roof patio and may assist in the dome. See the Exploring the Stars Web site: <http://physics.uwo.ca/community/cronyn/ets/index.html>

A total of 30 Exploring the Stars events took place, January 8-April 30, at the Hume Cronyn Observatory involving 746 visitors (children and adults), and attended by Centre members Robert Duff, Everett Clark, Dave McCarter, and Rob McNeil. Two amateur telescopes were used, the Centre’s 25.4-cm Dobsonian telescope, and the Cronyn Observatory’s 8-inch (20.3cm) Schmidt-Cassegrain.

There were 241 Star Finders; 55 Moon Gazers’ Guides; 28 copies of the book *Mary Lou’s New Telescope*; and 29 copies of Secrets of the Night Sky sky charts (Canadian Space Agency) distributed, January 8-April 30.

Seventeen Exploring the Stars events took place October 7-December 5, at the Hume Cronyn Observatory, involving 430 visitors (children and adults), with Centre members taking part in all 17 events, Everett Clark, Robert Duff, Steve Gauthier, and Suzie Chelico.

Star Finders distributed totalled 87, including 15 on October 15, 7 on October 23, 6 on November 19, 25 on November 25, 33 on November 26, and 1 on December 5; 18 Moon Gazers’ Guides were distributed on December 5.

Centre members assisted with 13 first-year student Astronomy 1021 Cronyn Observatory Telescope Projects by setting up the London Centre’s 25.4-cm Dobsonian and the observatory’s Meade 8-inch (20.3cm) SCT outside the dome on the roof patio, to supplement the 25.4-cm refractor.

There were 650 student visits supervised by 4 graduate students (TAs) each evening. Since the Astronomy 1021 students needed to visit to the Cronyn more than once to complete and register their projects, the TAs maintaining records reported 448 students in total. Four London Centre members took part in these 13 events: Bob Duff, Everett Clark, Steve Gauthier, and Peter Jedicke.

London Centre members have assisted with Western University’s first year student Astronomy 1021 Projects since 2011.

### **Robert Duff**

*Librarian & Higher Education Liaison*



# MISSISSAUGA

## CENTRE

The Mississauga Centre completed its 7th year in 2013. Thanks to the sponsorship of Dr. John Percy and Dr. Ulrich Krull, the Centre was able to continue its program of speaker nights where an expert gives a talk on an astronomical subject and member nights where centre members give presentations on a variety of topics. Meetings are held on Friday evenings at the University of Toronto at Mississauga (UTM).

In 2013, there were 9 Speaker Nights as follows:

|              |   |
|--------------|---|
| January 25   | Dr. Nicholas Law—Extremely Cool Astronomy: Finding Exoplanets in the High Canadian Arctic                           |
| February 22  | Dr. Chris Charles—Non-Spherical Chondrules in Meteorites: Evidence for Shockwave Activity in the Early Solar System |
| March 22     | Dr. John Percy—A Half Century of Astronomy Outreach: Stories, Reflections and Lessons Learned                       |
| April 26     | Dr. Ray Carlberg—The Startling Speedup of the Expansion of the Universe   |
| May 24       | Dr. Michel Fich—Observing the Universe from the High Atacama Desert   |
| June 7       | SPECIAL SPEAKER NIGHT—David Levy  |
| September 27 | Richard Jarrell—Towards an Intellectual Genealogy of Canadian Astronomers   |
| October 25   | Kerry-Ann Lecky Hepburn—Collaborating in Astrophotography   |
| November 29  | Thayne Currie, University of Toronto—Directly Imaging Extrasolar Planets  |

At the 11 Member Nights, members of the Centre spoke about Starfest, the Saskatchewan Summer Star Party at Cypress Hills, North Frontenac observing, star party history, AstroCATS show at Sheridan College, the GA in Thunder Bay, and changes to the RASC structure.

Observing topics included regular presentations about the sky this month, the Messier and Exploring the Universe Certificates, top-10 Celestial events for 2013, using guide points to find 20 stars and 15 constellations, the Big Dipper, Comet ISON, Comet Pan-STARRS, the solar eclipse of November 3. Members spoke about astronomical experiences on trips to Peru and Chile, on Mauna Kea, aurora observing in Alaska, and three different talks about astronomical adventures in Italy, namely about a clock that runs backwards in Florence, astronomy art in Rome, and transit lines in Italian churches. There were also talks about Shuttle Atlantis moved to a new home, an interesting radio company (Motorola), the ISS crossing the disc of the Sun, 12 years of solar eclipses, construction of a private observatory, Saturn, the Earthshine Planetarium fundraising campaign, light-pollution abatement, lighting in Mississauga, Chris Hadfield's Visit to the Freedom Day Celebration, new equipment, and introduction to digital astrophotography.

Thanks to the efforts of Past President Randy Attwood, the RASC sponsored a lecture tour of famous Canadian comet hunter and educator, David Levy, who spoke at various Centres about his comet hunting career. The Mississauga event was very successful on June 7 when 350 people filled a large auditorium at UTM. Many Centre volunteers helped with the advertising, organizing and running of the event. Two astronomy banners were designed with Centre promotion information and astronomical images taken by members.

Public outreach is an important activity of the Mississauga Centre. As in previous years, the Centre partnered with the Earthshine Astronomy and Space Science Organization to hold eight lecture

and observing nights at the Riverwood Conservancy. At these events, between 6 and 12 Centre volunteers came out each time with their telescopes and expertise. Centre members volunteered for Brownie presentations on January 1, 29, and February 25, Scouts on February 28, Cubs on March 21, Air Cadets on March 20, and at the Probis Club in Oakville on January 2 and June 20 and Mentor College on June 5. Several members of the Centre also volunteered at the Earthshine astronomy library presentations on September 10, 12, October 8, 17, 23, and November 11 and 14. The membership also assisted the Earthshine Organization with its campaign to fund a planetarium in the Greater Toronto Area.

Since its foundation, the Mississauga Centre has been committed to astronomy observing and helping beginners get into the hobby. Members are able to borrow telescopes thanks to the Centre's telescope loan program run by Gerard Foraié. Most telescopes were in good use for the summer. Over 30 Centre members and their guests attended the very successful annual Starfest astronomy event in August. Centre members also attended the Saskatchewan Summer Star party and the Toronto Centre Algonquin Adventure. Members observed Comet Pan-STARRS in March, some were able to see comets Lovejoy and ISON in November, and Nova Delphini in August. Eleven Centre members and family gathered as well in the pre-dawn hours of November 3 on the shore of Lake Ontario to successfully observe and image the sunrise partial eclipse of the Sun. Jo VandenDool ran the "Explore the Universe" certificate program and provided coaching to several members working on the certificate.

Leslie Strike continued as President, Randy Attwood as Past-President, Chris Malicki as Secretary, Allan Connery as Treasurer. Terry Hardman resigned as Vice-President and his role was taken over by Andrew Opala. John Marchese was Membership Secretary, Gerard Foraié was co-ordinator of the telescope loan program and merchandise, and two new Councillors, Simon Cloughton and John Golla, joined the Council.

Andrew Opala, Allan Connery, and James Beckwith helped develop and set up an improved Web site for the Centre using Wordpress software. The Yahoo group, Meetup, Facebook, and Twitter were all used to advertise the Centre's activities.

The Centre purchased a Sky Quality Meter to monitor and document light pollution in Mississauga.

The Centre can also feel proud that its Past President, Randy Attwood, received one of the first three Fellowship Awards of the RASC, the highest award of the RASC can present. It was presented in recognition for his outstanding contributions to the RASC over many years.

Due to re-organization of the National Society, the old associate membership has been replaced by a new family membership. Members of the Mississauga Centre benefit from publications, the right to borrow telescopes, special observing nights, and access to the Centre Yahoo group.

**Chris Malicki**  
*Secretary*

No report submitted

## MONTRÉAL CENTRE

In 2013, the Montréal Centre consisted of approximately 110 members whose goal was to share the joys of the night sky. During the year, the Centre organized and hosted numerous public astronomy outreach events. The majority of the public events were held at the Montréal Centre's Bellevue Observatory, which is located on the Western tip of the Island of Montréal and is considered to be the darkest area on the island. Free public astronomy lectures and star parties were held almost monthly throughout the year with subjects ranging from a "Beginners Guide to Astronomy" to more advanced astronomy presentations. The largest turnouts were for the Centre's "Annual Perseids Watch" (350+) and the Geminid meteor shower along with our daytime "Safe Solar Viewing" events.

The Montréal Centre also participated with neighboring municipalities and their local events. In 2013, the Centre participated in Earth Hour celebrations, Spring Break Activities, The Lester B. Pearson School Board's "John Scholefield Science and Technology Day," Oktoberfest, and many others.

The Centre continued its efforts to have the site of their Bellevue Observatory located at the Morgan Arboretum declared as Canada's third Urban Star Park. Part of our outreach efforts included public education and several presentations to the surrounding municipalities which resulted in the Town of Ste-Anne de Bellevue passing one of the province's most stringent Light-Pollution By-Laws.

Centre activities for our members included almost weekly "Clubhouse Meetings," numerous out-of-city/dark-sky observing sessions, a visit to the newly opened Montréal Planetarium, our annual StarBQ and our Christmas party.

**Morrie Portnoff**  
*Secretary*

The RASC New Brunswick Centre had a very exciting and successful 2013. As one of the few provincially focused Centres, opportunities to meet and show the public the wonders of the night sky kept a strong core of volunteer members hopping all over the province.

### Education and Outreach Activities

Members of the Centre hosted/participated in 101 education and outreach events throughout New Brunswick in 2013, resulting in a reach to 4100 members of the public. Many of the events were planned activities in conjunction with Astronomy Day, Earth Hour, and our annual star parties, which are held in partnership with various Provincial and National Parks. However, many if not most events came as a result of requests from service groups like the Guides, Cubs, and Scouts, nature clubs, seniors' organizations, the provincial science centre, Science East, STEM/science fairs, and schools.

The distribution of Star Finders and Moon Gazers' Guides is a key measure of our education and outreach success. During this past year, 1610 Star Finders were handed out and 1633 Moon Gazers' Guides made their way into the hands of New Brunswickers.

### Memberships Status

In 2013, the Centre reported 66 members, down by just two individuals over the end of 2012. Month-to-month variation in membership numbers ranged from a high of 68 to a low of 64.

Discussions continued throughout the year on ways to maintain/increase membership numbers. The President makes an effort to contact all individuals whose membership is about to lapse, to remind them to renew.

The Centre continues to explore opportunities to increase membership by encouraging partnerships with groups that have similar interest in astronomy, space, and science.

Of concern to Centre Council this past year, was the lack of active participation of the existing membership in monthly meetings. It was identified that a core of 12-15 members spearheads the majority of Centre activities. Burnout of these members is a concern. A survey was conducted in December to identify issues that impede members from attending meetings. Time commitment, given limited family time and time for other personal activities, was the significant barrier.

### Meeting Updates

Whereas the New Brunswick Centre is provincial in nature and not locally established in one community, monthly meetings rotate among the cities of Moncton, Fredericton, and Saint John, and on occasion in Miramichi. Meetings are usually held on the third Saturday of every month except in July, August, and December. Meetings tend to consist of 2-3 talks/presentations, individual observing and imaging reports, Show & Tell, and a monthly "What's Up."

This year saw several workshops on how to collimate your telescope, properly cleaning your eyepieces, and how/when to use filters. Presentations included topics such as near-Earth objects, the Tunguska event, using white paint to move asteroids, astronomy outreach in South African schools, and the Iridium satellite network.

At the annual meeting in October, the Centre was fortunate to have leading speakers on the topics: the Mars Rover, Curiosity (Beverly

Elliott, Planetary & Space Science Centre, UNB), Astrophotography (Blair MacDonald, Halifax RASC), Micrometeoroid Impact Threats (Dr. John Spray, Planetary & Space Science Centre, UNB) and Massive Stellar Evolution (Dr. Catherine Lovekin, Mount Allison University).

In November, the Centre was able to take advantage of the RASC Public Speaker Program and hosted James Edgar, of the Regina Centre, who delivered a talk on the Formation of Elements in the Stars.

### Council

The Centre Council for 2013 was:

Curt Nason, President  
Chris Weadick, Councillor & NAC Rep  
Marc Arsenaault, 1st Vice-President  
Angela Davis, Councillor  
June MacDonald, 2nd Vice-President  
Don Kelly, Councillor  
Emma MacPhee, Treasurer  
Roger Pitre, Councillor  
James Ayles, Secretary  
Peter Jensen, Past President

At the Annual Meeting in October, Chris Weadick stepped down as NAC Rep and was replaced by Marilyn Bregg, with Adrien Bordage as Alternate Rep.

### Work of Committees

Along with Centre Council, there are three standing committees and four position managers who are responsible for the successful efforts of RASC-NB:

**Light-Pollution Abatement Committee (Chair - Chris Weadick):** Work continues to bring the issue of light pollution to the forefront. Achievements this year include starting the process to trademark "Freddy the Frog," the light-pollution mascot, working with the community of Hanwell to consider submitting their new park development for an Urban Star Park designation and providing light-pollution information at events such as Earth Hour and Astronomy Day. More work is intended for next year, especially on the development of the LPA Web site "Save our Skies" ([www.SaveOurSkies.ca](http://www.SaveOurSkies.ca)).

**Education and Outreach Committee (Chair—Don Kelly):** Work continues to ensure opportunities to provide eye time at scopes exists throughout the province and children have an opportunity to explore their interest in space and science. A considerable number of outreach events took place over the past year. Many of these events could not have happened without coordinated efforts between the Light-Pollution Abatement, the Star Party and Events, and the Education and Outreach committees.

**Star Party and Events Committee (Chair—June MacDonald):** The Star Party and Events committee organized four star parties throughout New Brunswick in 2013:

The 3rd annual Kouchibouquac Spring Star Fest, Kouchibouquac National Park, May 31 to June 2. Unfortunately, the weather was not very cooperative. While there were many campers eager to have a look through the telescopes, only a small break in the clouds on Saturday morning gave opportunity for brief glimpses at sunspots.

The 10th annual COW Summer Stargaze, Mactaquac Provincial Park, July 12-14. The weather was excellent and many members were in attendance with their scopes. Each night of observing resulted in approximately 200 to 225 campers taking delight in the views through the telescopes.

The Mount Carleton Star Party, Mount Carleton Provincial Park, August 2-4. The rainy forecasts resulted in this event not being well attended by members or campers, which is unfortunate, as Mount Carleton Provincial Park has the darkest skies in all of New Brunswick.

The 3rd annual Fundy National Park Stargaze, Fundy National Park, August 30-September 1. This event garnered approximately 150 campers, who joined members for some solar and nighttime observing under very clear skies. The weekend had to be cut short by one day, however, due to inclement weather.

**Newsletter (Editor—Peter Jensen):** *The Horizon* newsletter was published four times during this past year. Members are always encouraged to submit articles of interest.

**Web Site (Webmaster—Marc Arsenaault):** The RASC New Brunswick Centre's bilingual Web site continues to draw traffic ([www.nb.rasc.ca](http://www.nb.rasc.ca)) and items of interest are continuously posted to the Centre's Twitter account and Facebook page by Angela Davis. The Facebook page now has 157 "likes."

**Equipment (Manager—Chris Weadick):** The Equipment Manager position was vacated partway through the year. Eldon Rogers has performed an excellent job in maintaining the Centre's inventory of equipment for the past several years. Chris Weadick agreed to step in and undertake the job. The equipment inventory grew this year with the purchase of a Herschel Wedge and the acquisition of a new mount for the PST solar scope. A new on-line equipment request and reservation system was implemented with the assistance of the Webmaster. In conjunction with the new reservation system, a new access to Centre telescopes policy for members and non-members was developed. While there will be no charge for members to use a telescope, a non-member can rent a scope for a nominal fee with the backing of a member.

**Library (Librarian—Ted Dunphy):** The library continues to accept donations of books and other resource material. All members can browse the collection on the Centre's Web site, and should they have an interest in a particular book, they can make a request to the Librarian on-line.

### Other Notable Accomplishments

The Centre has been very successful in efforts to work collaboratively with a local Transport Canada official on the use of Green Laser Pointers (GLPs). Key to this success has been the open and continuous communication between parties. Although securing approval to use GLPs at public outreach events requires some paper work, the streamlined process put in place to facilitate submissions and having a central contact for communication purposes has led to all requests being approved to date. Second to this success is Transport Canada's recognition that Centre members use their GLPs in a responsible manner per GLP guidelines and as a result no incidents have been reported by aviators during approved times.

Centre members had the privilege of participating in the filming of a documentary being developed for a Belgian television series called "From Earth to Sky," hosted by Serge Brunier. Filming took place at Fundy National Park in late July. Fundy was chosen for this episode because the topic of the documentary was on the Moon and its effect on tides; everyone knows that the Bay of Fundy has the largest tides on the planet! Broadcast of the documentary is anticipated to occur sometime in late 2014.

### Outlook for 2014

Work is well underway for another exciting and successful year with the Centre. Several star parties are being planned again for various locations throughout the province. New partnerships are being forged, like the one with the Moncton High School and the development of their new astronomy club and observatory; more on this to come next year. As always, the Centre is membership driven, so we look forward to their new and innovative ideas to enhance the night sky experience for all to enjoy.

**James Ayles**  
*Secretary*



The Niagara Centre had a busy year in 2013, filled with observing, public events, regular meetings, and get-togethers.

Our membership declined slightly in 2013, going from the high 60s to the low 60s. After several years of declines, we seem to have stabilized at this level.

We had a good year for booking guest speakers to our monthly meetings, with a wide variety of talks from our members and guests. In March, we hosted our first “Webinar.” Tom Field addressed our club from Seattle, Washington on amateur spectroscopy.

The Niagara Centre continued a strong tradition of public star nights at museums, libraries, a hospice, schools, 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 private park and conservation area 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.

Club members travelled to star parties in Ontario and Pennsylvania. About 15 members attended Starfest in August.

Wind turbine developments are being planned in the Niagara Region. We are lobbying the companies behind these projects to use appropriate night lighting on the turbines and the surrounding grounds. They have noted our concerns and have explained the lighting systems they are required to use, and have chosen to use.

White LED lights are becoming more common on city and regional streets. We are contacting city and regional government to express our concerns. Measurements with the RASC’s Sky Quality Meter have shown that the overall brightness is not changing, but the colour near the city of Welland (a leader in going LED) has gone from orange to white. A picture from space by astronaut Chris Hadfield confirmed these ground observations.

### RASC Niagara Guest Speakers – 2013

|           |   |
|-----------|---|
| January   | Don Pullen, “Amateur Radio Astronomy”   |
| February  | Brian Pihack, “The Winter Skies”  |
| March     | Tom Field, “Amateur Spectroscopy”   |
| May       | John Gauvreau, “Astronomy at the Eyepiece”  |
| June      | Philip Downey “Wide-field Astrophotography,”<br>Slideshows from Glen Pidsadnick, Bob Lewis. |
| September | David Perry “Collimation of Newtonian Telescopes”   |
| November  | Ian Shelton “Comet ISON and other comet observations”                                       |
| December  | Stephen Germann “The SkyStopper”  |

**Philip Downey**  
*Secretary*

The Okanagan Centre’s membership spans the length of the Okanagan Valley in British Columbia’s southern interior, with members as far south as the U.S. Border at Osoyoos, extending north to the Shuswap. Our 2013 membership numbers 116, representing an increase of 9% this year.

Due to our geographic size, approx 250 km (north to south), the Centre is organized into three meeting groups situated at the primary population centres in the valley—Penticton, Kelowna, & Vernon. Each hosts monthly meetings (except July & August) as well as a designated annual joint meeting of the Centre. Members will attend the monthly meetings from the different locales, with a concerted effort for a good showing being made from up and down the valley for the specific three joint meetings. These combined meetings allow our Centre members the opportunity to better mix with those from elsewhere within the Centre who we may not see on as regular a basis.

Our meetings are similar to that of other RASC Centres’. Segments are devoted to our member’s recent observing sessions, discussions of current and upcoming astronomical events, and one, if not two, presentations on interesting topical subjects delivered by our members or specially invited guests. Additionally, each Vernon meeting features a 45-minute pre-meeting session devoted to telescopes, be that for new users, helping others with troubleshooting, and user techniques of a general nature.

The Centre continues to provide a wealth of informative resources aimed at keeping us fully advised. The month starts off with our President, Colleen O’Hare, issuing her President’s Report, as well as Dave Gamble’s monthly celestial happenings report “What’s Up?” being updated on our Web site. As a follow-up reminder, Dave issues shorter weekly versions provided electronically to keep us on our toes. *Focus*, the Centre’s newsletter, publishes mid-month by editor Hugh Pett and contains more information on Centre activities, short stories, interesting items, and periodical updates of member counts recording their progress working towards the various observing certificates (Messier/NGC, etc.). Members of the Centre also utilize an e-mail fan-out broadcast system “AstroOkanagan Google Discussion Group” that distributes time-sensitive messages of Centre or astronomical importance.

Centre member Alan Whitman was selected by the RASC National Awards Committee as recipient of the 2013 Simon Newcomb Award. The award is intended to encourage Society members to write on the topic of astronomy for the Society or the public, and to recognize the best published works through this annual award. Alan has a lengthy history of contributions to national and international journalism, including book author, published articles, scientific papers, and authoritative observational guides all drawing on a lifetime of astronomical experience. Publications include annual editions of the RASC *Observer’s Handbook*, periodically in the *Journal*, as well as feature articles in magazines such as *Astronomy* and *Sky & Telescope*, the latter where he is a contributing editor. Alan joins a select group of members having received this award.

Another of our members honoured during the year was Bruce Aikenhead. On the occasion of his 90th birthday this past fall, Bruce was recognized as one of the pioneers of the Canadian aerospace industry at a function held at the Okanagan Science Centre in Vernon. To mark the occasion, Canadian Astronaut Col. Chris Hadfield was on hand to introduce Bruce and reminisce about Bruce’s lifetime of excellence, dedication, and professionalism. Bruce’s career spanned nearly 40 years in aerospace engineering

and astronaut training development. Beginning as a systems engineer of flight simulators for aircrew training on the AVRO Arrow, he then moved onto NASA, developing training aids for the “Mercury Seven,” the original astronauts of the *Mercury* Program. Following his NASA time, he returned to Canada and continued with space-related projects including work on the “Canadarm” for NASA’s Space Shuttle program. As Manager of Canadian Astronauts, he arranged equipment and training for Marc Garneau’s first *Shuttle* flight, and following the formation of the Canadian Space Agency, Bruce became Director General of the Canadian Astronaut Program. Since retirement in 1993, Bruce has played an integral role in the development of the Okanagan Science Centre’s space galleries and education programs. The importance of his contributions to Canada’s space industry cannot be overstated, thus his being recognized as a true Canadian Space Pioneer.

### Outreach Activities

The Centre’s Outreach Program is structured similarly to that of our three meeting groups, with a coordinator appointed to lead activities for each. The following illustrates some of the initiatives / accomplishments during 2013.

Penticton Outreach—Under the coordination of Al Fishler, another good year was experienced in the South Okanagan bringing astronomy education and passion to the public. All events were free.

In May, as part of the Meadowlark Nature Festival, we invited the public to the grounds of the Dominion Radio Astrophysical Observatory (DRAO) near Penticton to enjoy a presentation and night-sky watching. The presentation featured “A Tour of the Universe” by Colleen O’Hare and Guy Mackie. Six telescopes were set-up for night-sky viewing, including one by visiting RASC Calgary member, Roland Dechesne. The approximately 40 visitors enjoyed naked-eye tours, astronomy discussions with members, and telescope viewing.

In June, members organized a star party for Girl Guides at the University of British Columbia—Okanagan (Kelowna campus). A co-op student at DRAO, Stephanie Gerbrant, provided a presentation before nightfall. Clouds ultimately interfered with sky viewing, but members brought their telescopes indoors and demonstrated how they worked. About 140 Girl Guides, leaders & parents attended.

On August 11 we partnered with DRAO to host the Perseid Meteor Shower Event on their observatory grounds. Approximately 300 guests attended presentations or took tours of the facilities. Ryan Ransom gave an interactive presentation to a young audience. Unfortunately, a thunderstorm arrived at nightfall, sending the majority of participants home early. For those who remained, the skies cleared round 10:30 p.m. and the Perseids put on a great show.

Other events during the year had members partnering with DRAO and UBC staff to host a UBC alumni event attended by 125 guests. Al Fishler gave a presentation to a group of 35 members of the BC Retired Government Employees Association. Dave Whalley provided a solar eclipse presentation to the Oliver Rotary Club.

On December 21, members put together a series of events to celebrate the winter solstice. Between 9 a.m.-1 p.m., we operated a booth at the Penticton Farmer’s Market, which displayed natural, historical, and cultural information about the solstice. For sunset, the public was invited to Pen Henge on Munson Mountain in Penticton. Pen Henge is a stone array that tracks the position of the setting Sun. Though clouds spoiled the view at sunset, members used the opportunity to speak to the public about the historical uses of such season-tracking structures. Following sunset, members co-hosted a solstice gathering at the Shatford Centre in Penticton. Refreshments were served and stories shared. Approximately 70

guests/participants attended one or more of the three solstice events. Centre members host sunset viewing events at Pen Henge on each of the equinoxes/solstices. All are publicized, with the winter solstice being the most popular and largest event.

Vernon Outreach, coordinated by Raffaele Scotto Lachianca, had a busy year with many educational outreach activities.

The year began, as it has the past few, with members co-hosting a telescope workshop for approximately 30 new users in conjunction with the Okanagan Science Centre. This partnership continued a month later during the Vernon Winter Carnival where they hosted the Okanagan Science Centre Astronomy Night attracting 50 people.

Through the summer and fall the outreach program provided five nights of astronomical presentations and public telescope viewing at the Allan Brooks Nature Centre. Additionally three daytime sessions of solar observing were provided, in total attracting several hundred visitors.

Again this year opportunities were available to assist local cub scout and girl guide groups. Members met 70 cub scouts at a weekend campout at Ellison Provincial Park where they provided nighttime presentations and sky observing. Two sessions based on constellations and stars was given to the Tillicum Girl Guides as part of their Badge program. Members, along with Penticton and Kelowna, attended and helped out with a Girl Guide campout at the University of British Columbia – Okanagan Campus.

Other events members participated in were the Optimist Club’s “Unplug & Play” where 30 families experienced solar observing. Also, the Kid’s Corner Childcare Centre providing a presentation on the planets and stars.

Vernon members have also been active with Light-Pollution Abatement issues, having numerous meetings with government and planning officials concerning the new North Okanagan Sports Complex. Members believe they have had a positive effect on the planning process both for residents and astronomers alike.

Efforts of members have been well received by the community and our outreach is becoming known for professional presentations and educational observing sessions. As a side benefit, a few new members have been attracted. A busy year is in the planning stage for 2014.

Kelowna Outreach—led by coordinator Colleen O’Hare, handled a large number of events again this year. Total events numbered 99 with approx 4,400 guests being exposed to astronomy. This year there were 23 school events (presentations and / or night observing) hosting 780 students, family, and teachers; 11 clubs and 304 guests; sidewalk astronomy—2 evenings attracting 80 guests. Additionally, 47 other miscellaneous events, such as monthly presentations at the Cancer Rotary Lodge, a number of large community festival events (Canada Day, Children’s Festivals, *etc.*), the Cancer Relay for Life, NOVA Programs, Kelowna Spring & Fall Wine Festivals, Halloween Spooktacular, and two Telescope Workshops for the public—collectively accounting for 2,714 guests.

The Centre’s three Outreach Programs continue making great use of Star Finders & Moon Gazers Guides supplied by the Society Office.

### Okanagan Observatory

The Centre’s Observatory is located a short 40-minute drive southeast of Kelowna in the general direction of the Big White Mountain Ski Resort. We continue to offer a regular schedule of free public educational/viewing nights as well as providing access any evening to our members for their personal observing.

From a public perspective, we currently operate from spring until very late into the fall, ending when mountain snow conditions



become too great an obstacle to deal with. Future plans, dependant on funding, will provide a level of snow removal allowing our public operations to run later in the year, if not year round.

Our public nights are advertised and begin at dusk with an educational program, usually conducted by Colleen O'Hare and Guy Mackie, in the Sky Theatre. Guests can then tour the darkened sky assisted by our Night Sky Guides along with ample opportunities for a much closer inspection utilizing any number of provided telescopes. The club's primary telescopes, the Gamble 25" Newtonian Reflector (Folded Light Path  $f/5$  - Alt/Az DOB mounted on a motorized equatorial platform, equipped with a Sky Commander Push-To digital coordinate system) and it's partner, the Astrophysics 130 mm ( 5.1" ) Starfire EDT Refractor (utilizing a 600E Mount, plus JNIGC Mini max computer that delivers Drive & Push-To capability) provide exemplary service every public night. They are assisted by member owned telescopes—together providing for a great astro experience treating the public to countless celestial delights. On any given public night we strive to have 6 - 8 telescopes available for our guests' enjoyment.

By season's end, our schedule provided 16 clear-sky Friday nights for hosting the public and in the process attracted 490 visitors. This year also including three school groups complete with their large school bus transports. Overall, guests tend to be predominantly local, but this year we also welcomed visitors representing half the Canadian provinces, a few U.S. states, and to our surprise, travelers from Peru, Germany, Switzerland, France, and New Zealand.

Centre members also made personal use of the Observatory, logging numerous nights of observing, sketching, and astrophotography. A "one evening" member star party was also a great success with over 30 in attendance. Food, drink, enjoying each other's company & stories—probably even a little star gazing took place! Can this be a sign of bigger things in the future? Stay tuned.

Donations, both financial and of equipment, during 2013 from our members, the public, and the corporate world, enabled our program to thrive, provide for improvements, and bankroll a little for future projects / improvements. As a result of a very generous corporate sponsor, we were able to acquire a major piece of program equipment and in late November we happily took possession of a DFM Engineering ARE-125 - Articulating Eyepiece. While its arrival was a little late for a thorough test drive this observatory season, first light is scheduled for May 2014. The device (not unlike the Canadarm) consisting of a series of optical tubes, mirrors, and elbow joints that when attached to a telescope allows the eyepiece to be lowered to any height thus providing wheelchair visitors an opportunity to comfortably observe photons "live" at the eyepiece, rather than via a camera & tablet style monitor screen.

A welcomed form of new support presented itself during the past year. We were very fortunate to have partnered with students of both Okanagan College, Kelowna Campus and the University of British Columbia, Okanagan. As part of their respective programs, they are assisting us with two technical observatory-specific projects. Okanagan College students from the Water Engineering Technology Program, overseen by their professors and our member Roland Oliynyk (a College lab-tech employee), designed a water acquisition and delivery system, as well as a waste-water system, both for eventual installation at the observatory as our future requirements grow. Students at the University of British Columbia are assisting with the design of the electronic control process for the Radio Telescope Project, as well as the wireless transmission of data from these telescopes. Assisting on this front is our member Vlado Neykov, an instructor at Okanagan College and student at UBC-O. More on this project is noted below.

The observatory very much continues to be a work in progress. This year saw a more-formalized guest welcoming centre / kiosk

being constructed. It provides the first formal contact with the public when approaching the observatory's developed area from the parking lot. Volunteers utilizing this welcoming kiosk ensure the public are welcomed, provided with details of the evening's program, have available astro materials for handout, and are now finding it a location the public will congregate to during a break from telescope viewing, stopping on their way to or from a bathroom break, or to simply astro-kibitz with the volunteers operating the kiosk. The very able construction crew was Guy Mackie, Grant Rice, Zoli Boda, Colleen O'Hare, and Dennis Krause. New projects on tap for the observatory site during 2014 will be construction of two additional telescope piers and the beginning of our campground development.

As noted in last years report, a new angle for us in recent years is the development of radio astronomy capability at the observatory. Being spearheaded by Hugh Pett, the radio telescope project had its first series of valid, repeatable observations, first with total power transits of the Sun and then full spectra in the H1 band (centred on 1420 MHz). This came after nearly two years of preliminary work on receiver hardware and software, and various other pieces of infrastructure. Thus far, all observations have been conducted at the home of the principal investigator, Hugh Pett. The first antenna, a 20-turn helix, proved not quite capable of repeatable results, transitioning to the use of a 10-foot-diameter dish, which immediately provided consistent results. Presently, all observing is in transit mode, where the antenna remains fixed in one position and the skies move across the observing beam. The dish has a FOV of 5 degrees at the working frequency of 1420 MHz. This frequency is preferred for observing the movements of galactic clouds of neutral hydrogen. The observations show clearly the effects of these clouds moving at up to 120 km/second towards the Earth. The goal is to develop a radio telescope utilizing two 10-foot dishes in an interferometer configuration, allowing mapping of hydrogen gas clouds using their Doppler-shifted spectra. The next step, hopefully in 2014, is the establishment of tracking mounts and dish installation at the Okanagan Observatory, with data gathering, recording, and dissemination to the telescope's users. Hugh occasionally produces a newsletter, titled *RADIUS*, providing information/progress about the project. For more information, or to receive the newsletters, you may contact him at [hipett@uniserve.com](mailto:hipett@uniserve.com).

### Annual Fund-Raising Dinner

In May, the Okanagan Centre held its Second Annual Observatory Fund Raising Dinner & Member's Social. Under the guidance of dinner chair, Grant Rice, the committee organized an excellent evening get-together of astronomers and friends, an abundance of interesting conversation, a silent auction, including a repeat of the previous year's fantastic dinner at the Kelowna Curling Club. This year, we were very fortunate to have as our featured speaker Dr. Seth Shostak, the senior astronomer with the SETI Institute in California. His talk "Are We Alone?" highlighted five decades of scientific search for extraterrestrial intelligence.

During the Annual Dinner, our Centre's Member of the Year was announced. We annually recognize a member for specific accomplishments or long-standing service to the Centre. This year, we recognized Zoli Boda for his many years in the Centre, as an avid outreach volunteer, our Treasurer for the past half dozen years, and notably through the initially challenging observatory construction period, and which also included his being very hands-on with the observatory's site planning, improvements, and construction of all sorts.

Proceeds of the dinner and silent auction are used to assist with the annual operating costs of the Okanagan Observatory.

## Members Astro-Chasing Activities

Although quiet compared to our member's 2012 travel activities (excepting one member), chasing astro events will remain of interest to our Centre's members. Below is an acknowledgement of those who traveled in search of the spectacular.

- April Aurora Trip—Iceland, Touring the Country, Sally Kilburg
- August Observatory Trip—Private Viewing Session on the Historic 60" (Timed to the Solar System Cycle) Mt. Wilson Observatory, California, Sally Kilburg (accompanying her associates from the Mt. Diablo Astronomical Society)
- Rings of Brodgar & Standing Stones of Stenness (standing stone array) - Orkneys, Scotland, Dave Whalley
- November's Total Solar Eclipse—North Atlantic Ocean (cruising off the west coast of Africa), Sally Kilburg
- Mt. Kobau Star Party (August) & Merritt Star Quest (September)
- Mt. Kobau (near Osoyoos) & Loon Lake (near Merritt) Members from the Okanagan Centre's meeting groups attended these local-area star parties

And, staying even closer to home, during March, members up and down the valley reported one or more individual successes in their hunt for Comet Pan-STARRS. Spring skies could be iffy, but when they co-operated, reports covered the full gamut of viewing—naked-eye, binoculars, camera, and telescope. We in the Okanagan weren't as lucky with December's Comet ISON, having only a few fleeting positive stories.

From the Centre's perspective, 2013 was a successful year, with everyone looking forward to 2014 and what it has to offer.

Further information on our Centre can be found at [www.ocrasc.ca](http://www.ocrasc.ca) (including newsletters, picture of the month, image gallery) and on the Okanagan Observatory website at [www.okanaganobservatory.ca](http://www.okanaganobservatory.ca) (operations, facilities, future plans, our donors)

### Dennis Krause

*Secretary*

## OTTAWA CENTRE

As 2013 winds down in its final weeks, we look back on the fantastic work our great Centre has done. Our main goal again this year was public outreach, and thanks to the numerous volunteers who have dedicated their valuable time, we continue to strive toward our goal.

Over the past 12 months, our Centre meetings have seen a total of 1,232 audience members. Many excellent topics were presented as well as an incredible collection of members' images. I would like to thank Paul Klauninger, our outgoing meeting chair, for his professionalism in keeping the meeting night smooth. I would also like to thank Chris Teron, who doubles as our audio/visual person running the multimedia presentations as well as being our extremely valuable Centre Secretary. Chris was also kind enough to open his house to our Council meetings. Because of their tireless work in preparing and presenting, our meetings are top notch. Our hospitality team of Ann and Art Fraser served the usual soft drinks, coffee, and cookies after the meeting. The after-meeting meeting continued at Kelsey's down the street, where food, drink, and great conversations round out the night until closing. Great times are always had by all.

The Ottawa Centre also broke new ground with its November meeting being streamed live over the Internet. Thanks to Eric Kujala for spearheading this project, as well as running his high-definition video equipment. So far, the most distant viewers were from California and Hawaii. Past presentations can be viewed online any time. We hope this will not deter members from physically coming to the monthly meeting. Streaming these meetings is another tool in public outreach. Eric has been recording past meetings for quite a while now and provides a DVD copy for the library, and which members can borrow.

As stated before, the strength of our Centre rests on the shoulders of our many volunteers. This year has seen its share of the usual participation and new requests from schools and for other special events. Our many volunteers participated in International Astronomy Day at the Canada Science and Technology Museum, Science Funfest (with 2,500 attendees), the Cube Gallery, the David Levy Lecture, AstroPontiac Fundraiser with Marc Garneau, and, of course, the summer star parties at Carp coordinated by Prajesh Joshi. The Yuri's Night was cancelled due to a snow storm. Sylvie Letourneau was extremely busy as she continued to support the school portion of public outreach for the Ottawa Centre, as well as the Museum. She alone presented at 14 separate occasions, which reached 425 adults and children. We also bid a warm welcome to our new Outreach Coordinator, Mr. Richard Harding. As you can see, Richard has accepted the position at a very busy time. Richard replaces Stephen McIntyre, who has done a great job during his time in that position.

Again this year, the Ottawa Centre is proud of its members who made it in the news by way of radio, published articles, gorgeous pictures, or a combination of them. This goes to show how talented our members are in what they do and they do it extremely well. And, speaking of writing, I would like to thank Dr. Janet Tulloch and Drew Hodge (Drew has stepped down) for their time in running our Centre newsletter, *AstroNotes*. Article content is the key to any newsletter and I encourage you to submit your articles to Janet. We no longer supply a paper copy, as they appear on the Centre's Web site.

Our current membership as of the end of October stands at 321 members, which is the same number reported last year. To think only a few years ago we had more than 400 members. Council will be working to find a way to help increase these numbers and, to the current members, we thank you for your ongoing support.

Our Vice-President, Mr. Gordon Webster, did a superb job in organizing this year's annual dinner, which was held on November 15 at Algonquin College. It was a stellar combination of astronomy and gastronomy. Thanks to the help of Brian McCullough, we were able to get Dr. Judith Irwin as the guest speaker and she gave an extremely informative talk on radio emissions from distant galaxies. This year's ticket sales were quite low with only 57 tickets sold. A nice selection of door prizes was raffled off at the end of the night.

Awards were handed out during the dinner. Congratulations to Rick Wagner for winning the "Paul Comision Observer of the Year Award", and the prize for the "Best Presentation" at a monthly meeting. On behalf of the Ottawa Centre, I would like to congratulate Brian McCullough on receiving the national Service Award from the RASC for his never-ending public outreach over the past two decades. Bravo Brian.

Another vital form of multimedia is our Web site and I would like to thank Chuck O'Dale for his quick updates to the site when called upon. The Centre also has a Facebook page where news and messages are instantly sent out to our faithful followers.

In closing, I would like to thank Council for all their help and great work accomplished this year and to the entire membership

for making my first year as President truly memorable. As we move into 2014, our Centre will continue to strive to inspire others to look up and wonder.

**Gary Boyle**  
*President*

## PRINCE GEORGE CENTRE

- The NOVA (New Observers to Visual Astronomy) course, now in its 10th year, started off the Centre's activities for 2013. The course was well attended by enthusiastic students.
- Taking advantage of some clear weather in February, a Binoculars Only Open Cluster Marathon was held.
- Glenn Hawley visited our Centre in March to update us on the proposed RASC By-Law changes.
- As part of our outreach mandate, two Centre members served as judges and award presenters at the Central Interior Science Exhibition. Prince George Centre Youth memberships were awarded to two students for their winning entry.
- Always popular, the spring windup barbeque was well attended.
- The Centre participated in the Northwood Wellness Day event and gave out information to over 100 Northwood Pulp Mill employees.
- Our booth set up at the Canada Day festivities attracted over 800 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 three Centre members. Activities included lectures and hands-on telescope experience.
- Most of the summer was spent improving and repairing the observatory. Dome repair, installation of new flooring, and construction of a wheelchair ramp were some of the tasks completed in time for reopening the facility in mid-August.
- Work continues on implementing dome/telescope movement synchronization.
- The Perseid meteor shower in August was well attended by members and the public.
- Members looked after the Centre booth in the Pine Centre Shopping Mall for the Fall Active Living Market. Many people visited our booth.
- Tom Field's spectroscopy Webinar was viewed by several members.
- As always, public tours continue to be popular. Hosted by a dedicated team, the tours offer a lecture, laser-pointer tour of the constellations, and hands-on experience using the Centre telescopes.
- "Our Night Sky" is broadcast weekly on a local radio station to make people aware of interesting objects and/or events in the night sky. The broadcast also helps to advertise the Prince George Centre.

**Glen Harris**  
*Secretary*

## CENTRE DE QUÉBEC

En 2013 à la SRAC Centre de Québec nous avons encore nos conférences mensuelles (ouverte au public). Les sujets suivants ont été abordés. Les comètes, l'astrophotographie, optique adaptative sur les grands télescopes, les trous noirs et autres.

La température, n'aidant pas, les visites à l'observatoire Alphonse Tardif de St-Nérée, ont été plus tôt rare. Merci à M. Marc Leduc, qui par sa disponibilité et son accueil chaleureux, a su réchauffer l'atmosphère des quelques visites. Avec la remise à niveau, maintenant terminé, du télescope de 14 pouces, la manipulation et la photographie astronomique est plus facile que jamais.

Merci à tous ceux qui s'impliquent, chaque année, dans le fonctionnement du club.

**Pierre Desrosiers**  
*Trésorier*

## REGINA CENTRE

While membership has stabilized around the 80-person level but with over 500 attendees at Regina Centre meetings, we continue to grow in the right direction servicing the public through open meetings and events.

Our Observatory was open to the public many nights.

On Astronomy Day 2013, we partnered with the Saskatchewan Science Centre where talks were presented along with planetarium shows. Winter held on strong and with 7-foot snowdrifts still in most yards, we didn't see temperatures above -10 °C and it snowed 5 cm, forcing the cancellation of any daytime or evening observing.

This year we brought in two featured guest speakers: Peter McMahon, the Wilderness Astronomer from SkyNews Magazine, spoke June 5, then we did a week-long tour around southern Saskatchewan, speaking and observing at a variety of dark-sky locations on the 1300 km route from Regina to Cypress Hills through Eastend and the Grasslands National Park. In November, Dr. Jim Rice was brought in through a partnership with Dr. Jack Mollard and the Saskatchewan Geological Society.

|            |   |
|------------|---|
| January 11 | Binocular Astronomy   |
| February 1 | Wide Field Wonders  |
| March 1    | Banquet & a variety of Centre member-led talks  |
| April 6    | Tom Field Spectroscopy  |
| May 3      | National Secretary James Edgar addressed the Centre Council and attending members on a variety of By-Law changes forthcoming within the RASC. |
| May 3      | Robert Hawkey—Beginner Astro-Imaging  |
| June 5     | Peter McMahon—Wilderness Astronomy  |
| September  | Mark Walker, Astronomer in Residence—Cypress Hills Observatory  |
| October    | Elections—Mark Bratton, Giovanni Battista Hodierna  |
| November   | Dr. Jim Rice—Roving the Red Planet  |
| December   | Pierre Schierle—Stargazing 101 Roundtable Discussion  |



## Outreach

- Late-Life Learners Class—100
- Astronomy Day, April 20, (10cm, -11°C)—300
- May, Tuesdays @ Library - 150
- Caring Hearts Camp for Bereaved Children May 12/13—150
- Scouts Canada, May 26—150
- Cypress Tour, June 6—50
- RSM Dino, June 7—25
- Grasslands National Park June 8/9—25
- Regina Learning Disabilities Association Camps—40
- Provincial Parks / Royal Saskatchewan Museum, Buffalo Pound, Fort Qu'Appelle, Moose Mountain—500
- Cypress Hills—10,000

## Chris Beckett

*President*

# ST JOHN'S

CENTRE

St. John's Centre had an active year with 10 public meetings (September through June), annual star party, Observe the Moon nights, Astronomy Day.

### Meeting topics were:

- Weather Forecasting for Astronomy (Ryan Snoddon, CBC Meteorologist)
- Christmas Social with 2012-doom prediction presentation
- Astro-year to come overview (Robert Babb)
- Vesta (Garry Dymond), Russian Meteor
- Members' Night
- Video—Interview with Neil Armstrong
- RASC By-Law change discussion
- Visit to Montreal Planetarium (Doug Grouchy)
- Summer Observing
- Astronomy Student Lecture (Anna O'Grady)

### Annual General Meeting

While St. John's had another pleasant summer, nights were often cloudy and several planned observing sessions were cancelled. A planned high-profile joint effort with Parks Canada for a camp-out night went ahead with a planetarium show. There was, however, some success with several solar-observing sessions as well as well-attended "Observe the Moon" nights and comet watches. Astronomy Day was celebrated with a display at the Geo Centre. Samples of member photos continue to be added to our Web site. The Centre's annual star party was well attended and we continue to have a close relationship with park wardens at Butterpot Park for this event.

The Centre continues to plan for installation of an observatory in 2014. Ground clearing has been started and a pier footing poured. A dome is expected to be ordered in spring 2014.

## Randy Dodge

*Secretary*

# SARNIA

CENTRE

no report submitted

# SASKATOON

CENTRE

2013 was a busy year for the Saskatoon Centre with activities that spanned administrative work, building construction, many public activities, a dark-sky tour, running the Saskatchewan Summer Star Party, and a full slate of monthly meetings.

President Jim Gorkoff spent time working on the new Articles of Incorporation for the Saskatoon Centre. Vice-president Jim Goodridge worked on programming for the year and worked with the University of Saskatchewan to provide RASC tour guides for Saturday night open houses at the University Observatory.

The year's activities began on March 23 with an Earth Hour star night at the Centre Mall, where the mall helps by extinguishing all of the parking-lot lights. On April 13, Centre members helped out at the Children's Discovery Museum at Market Mall, where Ron Waldron ran the STARLAB inflatable planetarium, Kathleen Houston ran an astronomy-focused art activity, and Barb Wright and Christine Kulyk ran the RASC information table.

Other activities in the spring, Astronomy Day observing at Lakeview Civic Centre on April 19 and Astronomy Day observing at Beaver Creek Conservation Area on April 20, were unfortunately clouded out. The Centre also was the opening act for the first Nature City Festival with solar observing at the Farmer's Market on May 25.

Members also participated in a Saskatchewan Dark-sky Preserve Tour June 2-5, organized by Chris Beckett of the Regina Centre that featured three lectures by science journalist Peter McMahan. The tour began in Regina, and over the next four days toured the Cypress Hills Dark-sky Preserve, the T. Rex Discovery Centre and Wilkinson Observatory in Eastend, and both the West and East Blocks of the Grasslands National Park Dark-Sky Preserve. At this time of the year, being in pre-camping season and hindered by a monstrous thunderstorm, the tour still managed to reach about 160 members of the public, and managed to review the dark-sky programs with all park managers. Dark-sky conservation efforts also continued in Saskatoon with support to the City's Dark-sky Policy and to the Northeast SwaleWatchers, who are attempting to preserve a pristine wetland by considering using the RASC Nocturnal Preserve certification.

Outgoing National Council Representative Richard Huziak and incoming National Advisory Committee Representative Tenho Tuomi attended the excellent Thunder Bay General Assembly from June 29 to July 2.

From August 16 through 19, the Saskatchewan Summer Star Party ran for its 17th year and had an attendance of 337. Speakers included Jenn Newman (Edmonton Centre, The Whitecourt Meteorite Impact), Dr. Gord Sarty (Saskatoon Centre, An MRI for the Space Station) and Dr. Erica Bird (Saskatoon Centre, The Saskatoon Children's Discovery Museum), with clinics by Alan Dyer (Calgary Centre), Tenho Tuomi, and Jim Goodridge (Saskatoon Centre).

Our Sleaford Observatory continued to have excellent use with monthly Observer's Group sessions and many members using the site between those times. In the fall, Darrell Chatfield, Rick Huziak, and others gave the observatory's warm-up shelter a major facelift, with the conversion of a cold-storage area into more warm-space that doubles countertop space for observers to make their notes. In addition, a new 200-square-foot cold-storage shed was constructed for storage of the snow blower, lawn mowers, and important supplies.

On October 5, the Sleaford Open House, a joint RASC / University of Saskatchewan open house, had about 20 carloads of visitors, despite inclement weather. Ron Waldron managed to entertain the chilled crowd by projecting a star talk against the siding of our new shed. The Observing the Moon event was combined with this open house.

General Meetings changed meeting times this year, now beginning at 8:00 p.m. on every third Monday of the month. The programs this year are given below.

|           |   |
|-----------|---|
| January   | Richard Huziak, So You Think You've Discovered Something! Digital Cameras, False Reports, and IR Leaks; SSSP '12 in Pictures (George Charpentier, photographer) |
| February  | Tenho Tuomi, Showing the Structure of Our Galaxy as Seen from Deep-Sky Objects  |
| March     | Discussion and Vote on Developing our Sleaford Dark Site  |
| April     | Dr. Erica Bird, The Children's Discovery Museum   |
| May       | Dr. Tom Field, You Can Almost Touch the Stars - Simple Spectroscopy   |
| June      | Ron Waldron, Sharing the Passion - Living the Dream: Highlights of a lifelong astronomer's passion for sharing the night sky                                    |
| September | Paul Lemkuhl, U of S Campus Observatory - A Brief History (a film by P. Lemkuhl)  |
| October   | The City Dark (a film by Ian Cheney)  |
| November  | Garry Stone, Building a Sextant; Observing the Planets With a Telescope (from Our Night Sky)  |
| December  | RASC Potluck Christmas Social   |

**Richard Huziak**

*National Representative (Retired)*

## SUNSHINE COAST CENTRE

|            |  |
|------------|--|
| January 11 | Adrian Payne: Optical Bench Demonstration. Bring Your New Telescope. 13 Members, 3 Visitors        |
| February 8 | Mike Bradley—Radio Astronomy Demonstration. 13 Members, 5 Visitors                                 |
| March 9    | Patrick Moore video. 14 Members, 5 Visitors  |
| April 12   | Dr. Stanley Uen—Puzzle of the Missing Neutrons. 25 Members, 35 Visitors                            |
| April 20   | International Astronomy Day. 5 Members, 80 Visitors, 60 Star Finders, 40 Moon Gazers' Guides       |
| May 10     | Bill Phillips—Satellites, Probes and the Russian-American Race for Space. 9 Members, 10 Visitors   |
| July 1     | Canada Day. 8 Members, 400 Visitors, 250 Stargazers, 60 Moon Gazers' Guides                        |
| July 9     | Camp Olave—Girl Guide Astronomy Badge. 1 Member, 6 Visitors, 4 Star Finders, 4 Moon Gazers' Guides |

|              |   |
|--------------|---|
| July 14      | Halfmoon Bay Fair. 4 Members, 6 Visitors, 4 Star Finders, 4 Moon Gazer's Guides                                     |
| August 15    | Thursday Night Market, Sechelt. 6 Members, 50 Visitors, 15 Star Finders   |
| August 17    | Astronomy in the Park. 10 Members, 400 Visitors, 45 Star Finders, 36 Moon Gazer's Guides.                           |
| September 1  | Sunshine Coast Botanical Garden Festival, 5 Members, 80 Visitors, 26 Star Finders, 25 Moon Gazer's Guides           |
| September 13 | Dr Jaymie Matthews—Exploring Worlds Far, Far Away. 20 Members, 50 Visitors, 10 Star Finders, 10 Moon Gazer's Guides |
| October 11   | Tom Fields—Spectrography Webinar. 14 Members, 10 Visitors   |
| October 12   | Fall Astronomy Day, Gibson's Mall. 8 Members, 150 Visitors, 18 Star Finders, 12 Moon Gazer's Guides                 |
| November 8   | Bill Burnyeat—Discovery of the Galaxies. 16 Members, 18 Visitors  |
| December 13  | Christmas Party—Astronomy Quiz. 10 Members, 5 Visitors  |

In addition to these events, a major highlight of the year was our observatory. After many months of negotiations with the Sechelt Airport and the Local Council, the club obtained permission to build an observatory in the corner of a small-plane airport. In March, our application of the previous fall to the Gaming Grant Commission received an award of \$12,000 towards the purchase of a telescope. The 14" telescope and accessories were purchased for about \$16,000 and the observatory was started in the summer. By the end of the year, the project was well underway with a concrete base for the pier, a completely enclosed building and a roll-back roof. The structure was designed by a club member and built with donated funds, donated materials, and much volunteer help.

The hope is to have the observatory operational in the spring of 2014.

**Bruce Fryer**  
*Secretary*

## THUNDER BAY CENTRE

2013 General Assembly: Dave Gallant led the Thunder Bay Centre's first General Assembly in the Centre's history. And it was a smashing success!

Astronomy Day at the Fort, April 27. Led by Dave Gallant.

**Observing Certificate:**

Doug Stuart was the recipient of the David Levy Deep-Sky Gem Certificate.

**Completed Projects:**

10-inch Dobsonian Telescope built. A donated 10-inch Newtonian refractor has been converted to a Dobsonian mount. The fibreglass tube was donated by a local fibreglass outfit, and Michael Bodnar generously allowed us to use his extensive woodworking shop. The telescope is currently stored at Andy Buchholz's place. Members are welcome to sign out the scope.

Dave Thompson Astronomical Observatory: Barney, Dave, and Ted were instrumental in helping bring this project to reality. The DTAO held their official grand opening on June 30th.



## Public Observing Night

An observing session was planned, scheduled and advertised for January 18, with cloud day on the 19th 2013 at Hillcrest Park. However, the clouds did not let up for those two days and the event was cancelled.

## Centre Observing Night

Observation nights are planned for the members on weekends that correspond closest to a new Moon on a site that is still reasonably close to town but with good skies. This year, our Centre Observing Night Chairman Doug Stuart planned two events. One in March, and the other in September. There were two observing nights planned for the members, one in June, and the other in September. The weather cooperated on most of the weekends planned, which allowed members to come out.

## Regular Scheduled Centre Observing Night

It was suggested by one of the members to hold a regularly scheduled observing night on a monthly basis where members can meet to observe, or go for coffee if the weather didn't cooperate. This was launched in October and is starting to build traction among the members.

## Outstanding issues:

Librarian Position is open. Library Materials: Barney has volunteered, at least as a temporary measure, to hold the materials at his house.

Memorandum of Understanding development with Fort William Historical Park, is on hold for now.

Updated Incorporation Papers have not returned from the Government.

## Summer Time Outreach:

This is where we give talks to the campers at the area parks, and then present the heavens either through the solar telescope and at night with the telescopes. There were three events that took place last summer:

- August 16-18: Quetico Provincial Park
- July 26: Kakabeka Provincial Park
- August 31 - September 2: Sibley Provincial Park

## Presentations

There were at least 16 presentations plus 9 Naked-Eye to Deep-Sky presentations (which inform the members of the most accessible celestial targets for the next month) from our President Brendon Roy.

## Participation Incentive

In order to encourage greater participation from the membership, the Centre introduced to the members an incentive program in October. Whenever a member contributed to the Centre such as submitting an article for the newsletter or conducted a presentation to the members or the general public, the member would receive a ticket that would be entered in a draw. The more participation, the more tickets that will be earned and entered in the draw. The member with the most participation, has the greatest chance of winning the prize.

## Meetings

The Thunder Bay Centre meets regularly each month except for July and August at Confederation College on the second Tuesday at 7:00 p.m. in Room 270, except for the January meeting where we met at the Dave Thompson Astronomical Observatory at the Fort William Historical Park. At this meeting, the DTAO was unveiled for the members.

## Ted Bronson

And of course, last but not least, Ted Bronson, one of our longtime and dear members has left our Centre due to moving to Manitoba to be closer to family. We certainly miss his knowledge and expertise and what he brought to our Centre.

## Andreas Buchholz

*Secretary*

# TORONTO

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## CENTRE

The complete annual report was presented at the Toronto Centre's annual meeting of 2013 November 27 and reprinted in the Toronto Centre's *SCOPE* newsletter January 2014 issue, available at the RASC Web site. This is a condensed version of that report.

The Toronto Centre participates in astronomy events at several locations around the city. During the reporting period from 2012 October 1 to 2013 September 30, we participated in several Ontario Science Centre star party events, organized by Jesse Rogerson and Sara Poirier:

- Halloween Star Party, October 26
- Earth Hour, March 23
- Summer "Science Slam" Star Party, July 12

The second and third of these star parties took place under clear skies.

Lecture Nights at the Ontario Science Centre were co-ordinated by our 2nd Vice-President, Prof. Paul Delaney from York University:

|              |   |
|--------------|---|
| October 3    | Prof. Roberto Abraham, University of Toronto—Galaxy Evolution           |
| November 28  | Prof. John Moores, Lassonde School of Engineering, York University—Mars |
| January 23   | Prof. Paul Delaney, York University—Have We Found Earth 2?              |
| February 20  | Dr. Matthew Johnson, York U/Perimeter Institute—Multiverses             |
| March 20     | Dr. Sarah Symons, McMaster U—Egyptian Astronomy                         |
| April 24     | Aaron Maxwell, McMaster U—Galaxy Formation                              |
| May 22       | Rachel Ward-Maxwell, McMaster U: Stellar Evolution                      |
| September 25 | Randy Attwood—Observing the Apollo Landing Sites on the Moon            |

These lectures have been archived in our library collection for the use of members on a loan basis.

Eleven "Recreational Astronomy Nights" were organized at the Science Centre by Paul Markov, one of which included a swap meet. In addition to these meetings, two special evenings were included: On October 17, our guest speaker was Dr. Stuart Clark, author of the "Sky's Dark Labyrinth" trilogy, speaking about Isaac Newton and the Sensorium of God. On June 5, Dr. David Levy, a proud member of two RASC Centres and the co-discoverer of 22 comets, spoke about "The Nightwatchman's Journey: My Adventures as a Comet Discoverer and Sky Watcher."

We also provide a monthly solar viewing session at the Science Centre, organized by Shawn Lee on a clear-skies-only basis on the first Saturday of the month, and during sunny mornings during Astronomy Week, April 15-19.

This year we hosted NOVA Program, “New Observers to Visual Astronomy” in the Gemini East Room at the Science Centre. This series of eight classes held on Wednesday evenings by a various instructors is becoming more popular every year. It’s a free event, open to the public.

We had our traditional joint lecture with the Royal Canadian Institute on November 25, when Dr. Sabine Stanley described Planetary Magnetic Fields.

This year at the Toronto Science and Technology Fair, our Leslie Harvey awarded Michael Sinila of Bishop Allen Academy the astronomy prize for his project entitled “Theoretical Spacecraft Propulsion.” And, at our meeting on March 20, Ralph Chou had the pleasure of presenting the Gold Medal of the RASC to the 2012 recipient from the University of Toronto, Ms. Pegah Salbi. The Toronto Centre of the RASC awards a Gold Medal annually to the student graduating with a B.Sc. in Astronomy or Astrophysics with the highest first-class standing from each of the University of Toronto and York University. The Toronto Centre has provided the Gold Medal at the University of Toronto since 1986. Prior to this date the Gold Medal was sponsored by the National Society for over 80 years. We also congratulate Dietmar Kupke, who received the National RASC Service Award medal at the meeting of August 7.

The Toronto Centre also has a set of awards for our members who have accomplished great achievements:

- Ray Thompson Award for Astrophotography: Jim Chung
- Ostrander-Ramsay Award for Astronomical Writing: Katrina Ince-Lum
- Jesse Ketchum Award for Construction: Tony Horvatin
- Andrew Elvins Award for Public Outreach: Jason Toliopoulos
- H.A. Winearls Award for Service (The President’s Award): Scott Masterton

The above five awards were presented at the Annual Open House and Picnic at the Carr Astronomical Observatory on June 1. About 40 people attended this event despite wet weather, which opened up later in the day. The Open House is the traditional beginning of the season at CAO. The CAO Committee is pleased to report that the site continues to be well utilized by our members, with many first-time users this year. Many members volunteered their time over three work-party weekends to effect improvements and regular site maintenance.

The committee welcomed Katrina Ince-Lum as a site supervisor and we would like to thank all our dedicated supervisors who continue to volunteer their time to receive and facilitate for members and visitors to the site. Member and guest usage of the site continues to be strong. Over the past year, there were 452 overnight stays in the house, 130 camping stays, and a further 157 paid, day-use visits. The committee continues to make good progress towards increasing the revenue and decreasing the operating costs of the CAO. This past year saw another two My Own Dome Lots, or MODLs—a SkyPOD and a SkyShed—leased to members, bringing the total to 5 MODLs occupied. These leases currently net over \$3,000 annually to the Toronto Centre. One MODL lot remains available. The 40 acres of farmed area continue to be worked by a local farmer who pays the Toronto Centre an estimated additional \$1,400 annually in land lease fees. The CAO continues its successful relationship with Western University via the All-Sky Meteor Network by supporting one of their stations on our roof.

This year we celebrated our fifth season managing, operating, and maintaining Canada’s largest optical telescope at the David Dunlap Observatory in Richmond Hill, Ontario. More than 3,300 enthusiastic visitors joined us for public viewing nights, star talks, family nights, and private evening programs for Scouts, Guides, and school groups. This brings us to over 17,000 visitors since the Toronto Centre took over operations of the observatory in 2009.

The Toronto Centre continues to have a long-term lease on the observatory with Corsica Development Inc.

To enhance our public programs, we created the “Skylab” utilizing a large unused workroom. The Skylab, with twin projectors, creates a 20-foot-wide projection space to display planetarium software simulations for teaching and sky demonstrations. The projectors were purchased using the 2013 Helm Fund monies.

The public summer programs began on April 20, under a clearing sky for International Astronomy Day, with 250 people in attendance. Our summer series of “Star Talks” began on July 6, spanning 13 evenings with two presentations each evening. This year, every Star Talk was sold out in advance, often by several weeks.

Speakers included: Randy Attwood, Dr. Roberto Abraham, Dr. Paul Delaney, Michael Lennick, Dr. John Percy, Kerry-Ann Lecky Hepburn, Sara Poirier, Dr. Michael De Robertis, Dr. Michael Reid, Chris Vaughan, Rachel Ward-Maxwell, Dr. Doug Welch, and Dr. Anne-Marie Weijmans.

In all, for fiscal 2013 the DDO ran a total of 46 programs, including a program entirely in French for a summer day camp and hosting a group of high-school exchange students from Japan. This was a 30% increase in programs over the previous year. This effort involved over 2000 hours of volunteer effort in program delivery alone. This was our fourth year providing opportunities for local high school students to volunteer at the observatory and assist in our summer programs. Twenty-one students were part of the 2013 program.

The observatory hosted several TV/film production companies this year. The new NBC series “Hannibal” shot scenes for several episodes. The CBC TV series “Cracked” and several smaller productions also used the site.

We began an educational partnership with Seneca College of Applied Arts and Technology in May 2013. This partnership is now in its second semester, offering a credited astronomy course taught at the DDO. The program makes use of the classrooms, Skylab, and telescopes.

The DDO continued to host Centre member activities including “First Light” for new members, regular member’s nights, and the Centre’s Telescope clinic.

A major effort by Michelle Johns and Gilles & Nicole Gaudet was the extensive clean up of the R.K. Young 19-inch telescope and south dome atop the Administration Building. The telescope was built by the first DDO Director, Dr. R.K. Young in 1929 and is now back in operation after decades of non-use. The telescope will be used by members for general observing and for special projects such as asteroid occultations.

There are 3 sets of monthly observing events co-ordinated by the Observational Activities Committee:

- City Star Parties, held at Bayview Village Park, and High Park if there is interest
- Dark-Sky Star Parties, held at Long Sault Conservation Area, and
- Solar Observing at the Ontario Science Centre

In addition, Members Nights are held at the David Dunlap Observatory (DDO). These are held monthly when public “star talks” are not scheduled.

The Public Education Committee held a number of presentations this year. We also held five separate star parties, with only one of these for a school. I attribute this to the work-to-rule policy during the year. Committee members also held presentations for 1 grade 6, 1 kindergarten, 12 Brownies, 7 Guides, 3 Pathfinders, 1 Beavers, 4 Wolf Cubs, and 8 library groups. In the end, the Public Education Committee held 47 presentations and star parties for 1861 children and adults and made \$1,088.00.

The Information Technology Committee consists of Allard Schipper, Jason Toliopoulos, and Blake Nancarrow. The committee continued management of the old RASC Toronto Centre Web site, and assisted in management and monitoring of our new Web site!

Toronto Centre members accomplished many observing achievements this year, from far-flung locations as well as at home. Ralph Chou led the Solar Eclipse Expedition to Australia in November 2012. Twenty-two members and friends of the Toronto Centre toured Sydney, Ayers Rock, Alice Springs, Darwin, and Kakadu National Park before arriving in Cairns, where the total phase of the eclipse was clouded out. Charles and Elaine Darrow observed the event in the Pacific Ocean.

Many members posted photos and observations of Comet Pan-STARRS at the end of winter, most notably Guy Nason who was visiting an astronomy village in New Mexico on March 12. Also Paul Mortfield's astrophoto of a disconnection event in the tail of Comet Lemmon was featured on SpaceWeather.com in May. Then on June 17, a large group of members, nominally led by Charles, descended into the bowels of the Sudbury Neutrino Laboratory 2000 metres below ground, the second year in a row we have toured the facility.

Members at large, too many to name, had the rare chance to observe a stellar explosion when Nova Delphinus 2013 peaked at magnitude 4 in August. Some members are also submitting variable-star observations to the American Association of Variable Star Observers. We are also experimenting with Sudden Ionospheric Disturbance Detectors, seismographs, and other instruments.

The 16th Annual Algonquin Adventure Star Party, held at Mew Lake Campground on September 5 - 8, had 97 attendees, even though the "weather gods" didn't co-operate during most of the official dates. The skies were clear on the Tuesday, Wednesday, and Thursday, which is sometimes how it goes.

Seven members completed observing certificate programs this year: Kersti Meema and Carolyn Spavor completed "Explore the Universe," Terry Trees, Stuart McNair, and Steve McKinney completed the Messier Program, Fred Motyl completed the Williamson Lunar Observing Program, and Bob Chapman earned the Astronomical League's Arp Peculiar Galaxy certificate.

The annual RASC General Assembly was hosted this year by the Thunder Bay Centre. At the GA the Society's new governance structure was approved by the membership and Francois van Heerden was elected to the new Board of Directors, where Denis Grey is already serving. Three of the speakers at the GA had strong ties to the Toronto Centre: Prof. Sara Seager, Class of 1941 Chair in Planetary Science at MIT, was a Toronto Centre member in the 1980s and was inaugurated at the GA as our newest Honorary Member. Prof. Ray Carlberg represented the University of Toronto. Randall Rosenfeld, representing Unattached RASC members, and who also spoke, is also from the Toronto area.

Jim Chung and Geoff Gaherty continue to contribute monthly columns to the *Journal* of the RASC, and several other Toronto Centre members have been published there. Nicole Mortillaro joined JRASC this year as Associate Editor-in-Chief!

The *SCOPE* newsletter is completing its 52nd edition, and I have completed 25 issues as editor since October 2009. I want to thank our advertisers that have provided some financial support for *SCOPE* this year: Khan Scope Centre, KWTelescope, and Babak Sedehi of Canadian Telescopes. I also must thank Sue Kralik for copy editing, and Leslie Harvey for effectively continuing as associate editor when I've been out of town.

*SkyNews* Magazine has included astrophotographs taken by Lynn Hilborn, Chris Malicki, Steve McKinney, Drew Patterson, Jim Chung, and Bill Longo. The RASC *Observer's Calendar* has included

astrophotos taken by Stuart Heggie. *Sky & Telescope* magazine has this year included astrophotographs taken by Paul Mortfield and Kerry-Ann Lecky Hepburn, and Richard Sowards.

The RASC *Observer's Handbook* for the new year once again features contributions by Paul Markov, Randy Attwood, and Ian Steer.

There are 507 regular members of the Toronto Centre, 77 life members, 17 youth members, 155 associate members, 21 student associates, and 6 affiliate members for a total of 783, where our total at this time last year was 805. We lost three members of the Toronto Centre during the reporting period this year: Allan Pengelly, Fred Giles, and Gordon Anthony.

In closing, I wish to also thank Rod Ends Mechanical Ltd. and Metrus Development Inc. for the use of their offices and of the DDO Administration Building for Council meetings; I also wish to thank the Ontario Science Centre for its continued hospitality in providing the facilities and audiovisual support for our meetings and public events. On behalf of the Council, I thank all members for your continued trust and support of our continuing saga.

**Eric Briggs**  
*Secretary*

## VANCOUVER CENTRE

2013 was another successful year for the Vancouver Centre. We built on partnerships with Metro Vancouver Parks, Simon Fraser University, the University of British Columbia, British Columbia Institute of Technology, the MacMillan Space Centre, the Richmond Public Library, the Maple Ridge Public Library, the Boy Scouts and Girl Guides, Canadian Telescopes, and Vancouver Telescopes. In total, we hosted 16 major events including 11 lectures, another 17 observing nights, and we participated in 12 other community outreach events. Our successful initiatives for 2013 include the following:

- Encourage our members to provide content at our monthly meetings. This was overall successful, as we had presentations from Bill Burnyeat, Doug Montgomery, Scott McGillivray, and two from Howard Trottier.
- Encourage more RASC members to volunteer at our events.
- Participate in at least 24 outreach events
- 2 astronomy workshops (member presentations from Doug Montgomery and Howard Trottier)
- 2 new outreach events
- A more reliable observing schedule. Using Meetup.com, we were able to schedule observing events several days in advance, notify our membership, and have far fewer weather-related cancellations.
- Increase our social-media presence. Twitter has over 100 followers, Meetup.com surpassed 1000 subscribers early in 2013, we started a Vancouver Centre Facebook page, and our council members were on television 4 times discussing astronomical events from 2013.

We did not achieve our goal to increase membership. Our numbers fell in 2013 from 250 to 190. Council believes this is primarily due to Vancouver Centre leaving the MacMillan Space Centre and using several locations for our monthly lectures.

There were no motions put forth by the council in 2013. Council felt that our current set of By-Laws and proceedings were adequate for operations of Vancouver Centre.



## Regular RASC Programming – 16 events / lectures

|               |   |
|---------------|---|
| January 10    | Jaymie Matthews—The extended Kepler mission to find exoplanets: To know the planets, you must know the stars. @UBC                                      |
| February 14   | Howard Trottier—Starry Nights @ SFU: Five Years and Counting  |
| March 14      | Ian McLennan—“Looking Back—and Looking Up” stories from a lifetime consulting for science centres and planetariums around the world. @ Douglas College. |
| April 11      | Christiaan Sterken—From Celestial Cartography to Astroseismology. A Story of 1001 Nights. @UBC  |
| April 27      | Astronomy Day @ SFU Between 400 and 500 in attendance including 15 RASC volunteers.   |
| April 27      | John Nemy—We are Dancing with the Stars @SFU  |
| Night lecture | complementary to Astronomy Day at SFU   |
| May 9         | Douglas Scott—Results from the Planck Spacecraft @ UBC  |
| June 13       | Member Presentations by Doug Montgomery and Bill Burnyeat @ BCIT. Bonus show in BCIT’s planetarium.   |
| July 11       | Nick Seiflow—Trends in Astronomy Equipment. Mark Eburne—Light Pollution @ SFU   |
| August 10     | Perseid Meteor Shower @ Aldergrove Lake Park  |
| August 17     | Starry Nights @ Deas Island   |
| August 23     | SFU observatory video shoot and observing   |
| September 13  | Alan McConnachie—“Big puzzles with small galaxies : galaxy formation and the problems with the tiniest galaxies” @SFU                                   |
| October 10    | Eric Dunn—“The Ever-Newer Solar System” @SFU  |
| November 14   | Howard Trottier—“Astrophotography” @SFU   |
| December 12   | Annual General Meeting @ SFU  |

## 17 Public Observing Events

|              |   |
|--------------|---|
| February 16  | Observing at Queen Elizabeth Park in Vancouver  |
| March 18     | Pan-STARRS observing at Boundary Bay  |
| March 26     | Pan-STARRS observing at UBC lookout   |
| March 30     | Pan-STARRS observing at Boundary Bay; 75 in attendance and 27 telescopes for 2 hours of comet viewing. Our most successful observing night of 2013. |
| April 24     | Planetary observing at Spanish Banks; 40 in attendance to view Saturn, Jupiter, and the Moon.   |
| June 1       | Observing at Selvey Park in Maple Ridge   |
| June 8       | Observing at Selvey Park in Maple Ridge   |
| July 1       | Observing at Boundary Bay   |
| July 9       | Observing at Spanish Banks  |
| July 20      | Solar Observing at Maple Ridge Public Library   |
| July 27      | Daytime / Solar observing at Campbell Valley Regional Park  |
| August 10    | Perseid Meteor Shower at Aldergrove Lake Regional Park  |
| August 17    | Starry Nights at Deas Island  |
| August 20    | Observing at Spanish Banks—Nova in Delphinus  |
| August 31    | Observing at Spanish Banks  |
| September 13 | Observing at Spanish Banks  |
| October 16   | Lunar Observing in Yaletown (Wainborn Park)   |

## RASC representation at 12 other events

|             |  |
|-------------|--|
| February 25 | Howard Trottier was on Global Television to discuss the Russian meteorite impact   |
| February 26 | Port Moody Girl Guides earned their Astronomy Merit badges with the assistance of RASC members Rohit Grover and Leigh Cummings |
| March 11    | Howard Trottier was on Global Television to discuss the Pan-STARRS comet   |
| April 5     | Mark Eburne, Leigh Cummings, and Wayne Lyons   |

|              |   |
|--------------|---|
| April 16     | presented astronomy for Langley Scouts<br>Muget and Terry McComas assisted at a Cub Scouts event  |
| April 29     | Bill Burnyeat presented to a Sparks event at South Burnaby United Church  |
| June 12      | Ciara Morgan-Feir, Mark Eburne, and William Fearon had solar telescopes at the Pleasantside Elementary School Science Fair. Ciara also judged in the event. |
| August 1     | Harvey Dueck gave a talk “Stars in our Sky” and brought a 15-inch Dobsonian to a several-day Nature Vancouver hike.   |
| August 10    | Scott McGillivray on Global Television to discuss the Perseid meteor shower   |
| September    | Mark Eburne presented on Light Pollution at WorkSafe BC   |
| September 27 | Leigh Cummings and Suzanna Nagy presented to a Cub Scouts campout at Stave Lake   |
| October 25   | Jim Bernath, Terry McComas, Jim Ronback, and Henry Neal represented RASC at the Richmond Public Library Science Bash.                                       |

**Mark Eburne**  
*President*



As a new member and in my first year as secretary, I have to admit I sometimes feel overwhelmed, not dissimilar to the level of activity as a volunteer at my son’s nursery school decades ago; however, with a vast difference in productivity and outcomes, you may rest assured. Bobble-heading through the minutes and *Skynews* of the past year has reminded me of what an enthusiastic, talented, and generous group the Victoria Centre of RASC is. As well, this year has presented some special concerns and challenges with such events as the sudden closing of the Centre of the Universe and with the preparations for the General Assembly 2014. Victoria Centre has avidly responded to both events, as well as undertaking a dazzling array of other services and activities. Allow me to elaborate, with a thank you to everyone who contributed to this report, some knowingly and some not.

## Public Outreach

The Victoria Centre volunteers have been extremely generous with the gift of knowledge. The astounding number of educational events in the public outreach program included: 61 visits to schools, clubs, and museums, with the help of 821 volunteer hours giving the public 9358 enjoyable Galileo Moments (GM). A sample of the institutions served include:

- William Head Institution
- Early Music Society of the Islands
- The Wellesley Seniors’ Residence
- Poets Cove
- Scattered Arts Studio
- Buccaneers Day
- Victoria Air Museum

No one escapes our Public Outreach people!

Due to the closing of Centre of the Universe in late August, our Outreach Group is receiving more requests from the schools than usual. Since early this September, they have had 11 presentations/

displays/star parties offering 1744 inspirational Galileo Moments (GM). Many thanks to Sid Sidhu, Lauri Roche, and now Chris Gainor, as he joins them in school events.

### **Regularly Scheduled Meetings and Functions**

Sid Sidhu holds the New Observers Group every fourth Friday of each month.

The Monday night Astronomy Café continues to be held at the Fairfield Community Centre. Not only do they have telescopes and speakers, but I hear there can be cake, cookies, and coffee, too! Malcolm Scrimger keeps this running.

The monthly general meetings, held the second Wednesday of the month, excluding July and August, continue to provide excellent speakers. I won't regale you with the details as these can be revisited on our Web site at <http://victoria.rasc.ca/> under "Past Meetings." And, while I am mentioning our well-stocked Web site, I have to remark on the spectacular Image Gallery of our members' works; it is truly breath-taking and a great way to get off the planet for a bit while sitting in the comfort of your own home.

Our council meetings, although normally held the first Wednesday of every second month, have increased, as needed, in preparation for the GA 2014. Mark Bohlman has been very effective in herding us onward in our various capacities in making this even happen.

The Active Observers Group (which I personally feel should be re-dubbed "The Hyperactive Observers Group") organized by MICs (members in charge) is highly proficient in notifications and up-to-the-minute viewing possibilities. They are a Chapter treasure.

*Skynews* is our monthly publication, which keeps the membership up-to-date on news and upcoming activities, thanks to our past editor Malcolm and our current editor, Diane Bell.

### **Observing Activities**

Victoria Centre Observatory (VCO) (Thank you, Matt)

The year has been quite busy at the VCO. Much time was spent improving the tracking accuracy of the mount to enable longer exposures with the aid of autoguiding. Some tweaks to polar alignment, along with improving the mounting of the two refractor scopes, have shown marked improvements in tracking. Exposures of up to 15 minutes are now possible on the Tele Vue. In addition, efforts to improve the Internet connection at the VCO have been under way. After some effort, the Herzberg Institute of Astrophysics (HIA) approved a plan to install a long-range directional Wi-Fi link to an Internet provider. We are currently in discussions with Shaw to arrange a connection. We are looking forward to another great year supporting our members observing and imaging endeavours.

### **Light Pollution/Urban Star Park—Cattle Point**

Thanks to Mark Bohlman and Dorothy Paul, and other members (David Lee, John McDonald and Sid Sidhu for their assistance in putting the USP application together) of the Light-Pollution Abatement Committee, for their fine work on the establishment of Cattle Point as an Urban Star Park. Mark also gave a superb interview about the park on CBC. Cattle Point Urban Star Park became official as of 2013 March 23 and is only the second such star park in Canada. There is now a RASCals monthly event there (dates on the Web site).

### **Messier Marathon**

The Centre's Annual Messier Marathon was held on March 8-9 at the VCO. In attendance were Micah, Jim, Greg, Urmila, Michel, and Charles. Micah Aalders, a teenage member, observed and logged a remarkable 102 Messier Objects.

### **RASCals/Metchosin Star Party for 2013**

The annual RASCals/Metchosin Star Party took place this year over the Labour Day weekend. The event offered three nights of observing. Our speakers and workshops were well worth attending. There were a number of enthusiastic community members in attendance (even Sunday night).

### **Other Activities**

Astrophotography Courses: John McDonald has used the Urban Star Park at Cattle Point for his courses at the Monterey Centre to highlight the park's value to the community. The first one was last spring and the second one started on September 24.

### **Thirty Meter Telescope (TMT)**

At the last AGM, Dr. Simard made a presentation on the TMT which will be the most advanced and powerful optical telescope on Earth. Its planned completion is for later this decade and it will enable astronomers to study objects as close as our own Solar System and as far away as forming galaxies at the very edge of the observable Universe, near the beginning of time. There has been some worry that Canada might be considering withdrawing financial support from this marvelous project, hence, Victoria Chapter has decided to write a letter of encouragement to our relevant government representatives in continuing with this commitment.

International Astronomy Day—April 27: 250-300 enthusiastic visitors, 270 GM, 30 Volunteers, 156 Volunteer hours, 100 Star Finders were distributed. This event, held at the University of Victoria, was a success, although, as Nelson noted, we would like to see better attendance. Pearson College was well represented. University astronomers were at the "Ask an Astronomer" table. Our own displays were nicely done and informative. There was a daylong program of speakers plus children's activity tables. Although the weather did not allow for solar observing, those who returned for the evening session were treated to a comprehensive update on the search for extra-solar planets. Lastly, late-night clearing allowed for some observing at the university's telescope.

### **2013 Symphony Splash on August 4: Astronomy for Splash.**

Victoria Centre, for the second year, was a sponsor for this event. Astronomy for Splash donations sponsored Michael Byrne, the principal oboist (and amateur astronomer). Lauri Roche won the draw to represent Astronomy for Splash on the barge and at other Splash events.

### **The Centre of the Universe Closure Tragedy.**

I call this a tragedy because the loss of such an educational institution is truly that. The Victoria Centre had a rapid and passionate response and continues to be active in looking for solutions in re-opening this wonderful venue. There were two petitions in action, one of which was written and brought to our meeting by Chris Gainor for us to sign. There has been much discussion at council meetings on various possibilities. More recently, Lana Popham, MLA from South Saanich, became interested. Toward that end, she hosted a meeting of "stakeholders" at the Observatory on November 23 to discuss what might be done. Several members of Victoria Centre have been invited, as have representatives from the local staff of the NRC and the University of Victoria, as well as from local schools, non-profits, and businesses.

The International Astronomy Symposium took place in Victoria on Tuesday, June 4. The main speaker, Dr. Deborah Fisher from Yale, presented a fascinating up-to-the-minute lecture about exoplanets. RASC National and Victoria Centre were involved in bringing her here. RASC Victoria Chapter was heavily involved in promotion because the IAS cannot advertise.



## National

Mark reported Thunder Bay GA 2013 as, “A wonderful 4 days.” Mark, Chris, Joe, Paul, and Jim Hesser all attended. Our very own Paul Schumacher was elected to the new Board of Directors.

### Getting ready for GA 2014 – just some highlights:

It is very exciting to be hosting the upcoming General Assembly in June. Curt Bilson produced a logo of the Plaskett Telescope and commemorating our 100th anniversary. The making of the promotional video for GA 2014 at the hill had a good turnout of participants; many thanks to Joe Carr for its production. Bob McDonald has been confirmed as our banquet speaker for Sunday night. Dr. Laura Ferrarese has confirmed for the Hogg Lecture, which is open to the public. As well, we are busy organizing extracurricular activities; fabulous food, and some Stay and Play events.

In closing, Matt informed us sometime last winter that our site had had about 1400 visits, from 952 visitors from 51 countries. The most common search question was, “Why is there a universe?” Well, Victoria Chapter, with your skills and enthusiasm, no one can blame you for not having that answer! You are truly one of Carl Sagan’s “Candles in the Darkness.”

### Deborah Crawford

*Secretary*



The Windsor Centre has maintained a membership of approximately 85 people in 2013. Regular monthly meetings are held at the City of Windsor Ojibway Park Nature Centre in the west end of town, which continues to be mutually beneficial to the education mandates of both our respective fields and easily accessible to members. Main presentations given during meetings this year have covered a wide variety of topics, such as Plutoids, Centaurs, & Kuiper Belt Objects, the Texas Star Party, Novae & Supernovae, and Designing & Building Equipment to Detect & Measure Infrared Starlight.

Individuals with an interest in astronomy as a hobby—for recreation, personal research, or astrophotography, have found it easy to discover & learn about our Centre online through our main Web site [www.rascwindsor.com](http://www.rascwindsor.com), as well as our Facebook page that continues to introduce residents of southwestern Ontario to the RASC. Our online & printed newsletter at meetings is an excellent source of information on Centre activities, and, since October, our new “At the Eyepiece” articles have been written to keep observers challenged with viewing distant objects in space.

Windsor operates an observatory located in a dark area of Essex County. Named after one of our Centre’s founding members, the Hallam Observatory includes a warm-up room connected to a dome, with a pier mounted Celestron 14 Schmidt-Cassegrain telescope within. Atop this large reflector is an AT111 refractor and a CCD camera used for auto-guiding, all of this run by a computer in the next room. The entire building is attached to an observing deck for outdoor stargazing, with a well-kept grass pad on site nearby for setting up telescopes. Open House nights for the public are held once a month, and members can have annual access to the observatory following an on-site training session and paying a small additional fee.

Our Public Education activities continue to be a mainstay of our Centre’s mission to inform & teach people about astronomy, with 2013 being one of our most productive years in recent memory. Observatory bookings held for public groups have included an astrophoto training session for a photography group, a visit by a small astronomy club from a new high school academy, two small groups that now visit at least once per year, a Girl Guides group, and two classes from a local Montessori grade school. Other events consisted of various members providing talks & sky tours for children at a Scout camp & community centre day camp, as well as hosting an outdoor display tent during Earth Day, and participating in the annual Science Rendezvous event at the University of Windsor.

The local RASC Dark-Sky Preserve of Point Pelee National Park is open to the public until midnight once a month during Dark-Sky Night events, with most of the grounds & open wooded areas accessible for telescope setup and observation. Located on the southernmost tip of mainland Canada, the park juts out into Lake Erie to give observers very clear views down to the horizon.

During a scheduled all-night Pelee event in March, some members of the Windsor Centre had planned to observe Omega Centauri globular cluster and the Centaurus A radio galaxy, two deep-sky splendours readily visible only from far more southern latitudes. Had it not been for freezing rain, our participants would likely have succeeded in spotting them through the atmosphere above the water, possibly obtaining better photographs than we had in years prior. However, this and other dates were still successful in educating a curious public, with August’s Perseid meteor shower event drawing crowds of well over 200 people, and the following month’s “Half-Harvest Moon” night bringing in nearly a hundred visitors.

The Windsor Centre has a very dedicated and active Light-Pollution Abatement Director, whose work in 2013 has greatly helped spread awareness of the problem of light pollution and the effects on the night sky. At a County Council meeting in March, the director requested that the county amend its policy of installing sag-lens luminaires at rural intersections. Though they have continued without using full cut-off (FCO) fixtures, despite the facts presented by our LPA director on FCO’s benefits in reducing light glare, we have since begun formulating a plan to challenge roadway lighting policy. Other developments include written letters to engineering consultants on upholding FCO standards on highways, including commending a local town on using full cut-off lights in a new development. LPA reports can be found on our main Web page. Greenhouse developments south of our observatory site continue to increase light pollution this year as well.

### Matt McCall

*Secretary*

The Winnipeg Centre continues to draw new members and recently surpassed the 185-member mark. We continue to meet on the second Friday of the month at the University of Manitoba, Fort Garry Campus, St. John's College at 92 Dysart Road in the Robert B. Schultz lecture Theatre. Our meetings are well attended and often draw 80 or more members and guests.

The Winnipeg Centre also supports the St. John's College by providing a scholarship award for one student.

Our Centre maintains an observatory at University of Manitoba's Glenlea Research Station, about 15 km south of the City of Winnipeg. There we have a dome that houses a 12-inch Meade LX telescope; plus we have a warm room complete with restroom facilities. A large concrete pad to the south, complete with power posts, allows the members to set up their own equipment. This site is where we hold our "Member's Observing Night," on the Saturday following our regular meetings. In 2013, we again had no issues of flooding from the Red River!

In 2013, our Centre added a third Dobsonian telescope to our "free" loaner scope program. This allows members of good standing to borrow the scopes for a longer period of time. We felt this was necessary, particularly with the unfavourable weather we sometimes experience. Plus, we have a number of scopes, maintained by Councillors, and used for public observing events.

The Winnipeg Centre participates in numerous regular astronomy events; some where we provide viewing opportunities for the public. One such event is "Astronomy Night," held in March for the members of Fort Whyte Alive, a regional conservation agency. It features our members providing presentations during a banquet dinner, followed by an observing session with telescopes outside in the cold. We unfortunately did not have clear skies for the post-dinner observing event.

On a regular basis, we also support the Oak Hammock Marsh, a nature centre located 30 km north of the city, for their monthly Astronomy Observing Night.

In 2013, we participated in the International Astronomy Day festivities by setting up a daytime display inside a local Chapters Book Store, and solar telescopes set up for viewing outside its doors. We normally then proceed to Assiniboine Park, our largest city park, where we would arrange an evening observing session. Unfortunately, similarly to last year, clouds covered our skies before the evening event started.

Unlike in 2012, where we hosted two public observing events (an annular solar eclipse and the Venus Transit), there were no major astronomical events to allow our membership to share an event with the public. However, we did have members who support the astronomy programs of the Birds Hill Provincial Park in Manitoba and the Rushing River Provincial Park in Ontario. They include evening presentations, daytime displays, and late-night observing sessions. Reportedly, they are the most popular of their public events programs.

The Winnipeg Centre also supports the Manitoba Schools Science Festival by providing judges, plus a cash prize to the person with the best astronomically based display. We attend a Science Teacher's Symposium, where we help to promote the RASC teacher's guide *Skyways*. Our membership will also provide their time and telescopes for requested star party events, such as for Boy Scouts or schools.

For the general membership, we start off our year with a January Pot Luck event; held at a member's home where the wait for warmer observing weather is buffeted by a chance for members to meet and mingle. With over 40 people on hand, it is well attended and enjoyed.

One of the favourite events we promote for our membership is an annual event called the Spruce Woods Star Party. Organized again by Silvia Graca, it is held at Spruce Woods Provincial Park, about 200 km west of Winnipeg, in a rural area with very little light pollution. We have a separate campground provided to ourselves, at the cost of providing the park with a public observing night in exchange. In 2013, we moved the member's event to September 5 to 8, to avoid interfering with those wanting to attend the SSSP in Saskatchewan. Our star party was attended by almost 60 people. This year we imported two speakers, namely Rick Huziak and Vance Petriew from the Saskatoon and Regina Centres, respectively, for the daytime workshop presentation. Rick spoke on the establishment of Dark-Sky Preserves, an area of interest to many Winnipeg Centre members. Vance spoke on the sciences of his comet discovery in 2001.

The star party also featured the well-respected "Gerry's Bino Tour," by Gerry Smerchanski, which was cancelled due to cloudy skies at the scheduled time. But, after a degree of clearing, and his chance passing of several members with questions on what they saw in the skies, he serendipitously started his talk. Once his voice was heard by other members at the campsite, a large group eventually gathered, leading to his hour-and-a-half-long, soul-enriching, fact-filled tour of the evening sky. Overall, the skies were far more challenging this year, resulting in more evening socializing than observing. We also had a movie night, which featured us projecting a movie onto the white canvas of our registration tent. On three evenings, guitars were pulled out, and a sing song was held.

The final event was an evening event at the nearby Bru Café, at which our resident comedian Dan Robertson performing a stand-up comedy routine. The event closes with a Sunday morning pancake breakfast provided by member Ken Metcalfe and his wife Janet. The SWSP event is very important to the Winnipeg Centre, as it provides not only an observing event but is an important socializing event for the membership.

In exchange for the free and exclusive use of the "Winter Camping area" for the SWSP, the Winnipeg Centre provided members for the Spruce Woods Public Observing Night, held three weekends earlier. We provide speakers for the evening's event, followed by an observing session. With over a hundred people attending, the Park Rangers were definitely pleased.

**Stan Runge**  
*Secretary*

# CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2013

|   |                                       | Belleville   | Calgary       | Charlottetown | Edmonton      | Halifax      | Hamilton      | Kingston     | Kitchener-<br>Waterloo | London        |
|---|---------------------------------------|--------------|---------------|---------------|---------------|--------------|---------------|--------------|------------------------|---------------|
| <b>REVENUE</b>                          |                                       |              |               |               |               |              |               |              |                        |               |
| Membership                              | Membership Fees: Centre Fee           | 810          | 7,708         | 158           | 5,360         | 3,020        | 2,352         | 1,611        | 2,458                  | 2,218         |
|   | Membership Fees: Associate            |              | 410           |               |               | 64           |               | 75           |                        |               |
|   | Membership Fees: Affiliate            |              |               |               |               |              |               |              |                        |               |
|   | Membership Fees: other                |              | 276           |               |               |              |               |              |                        |               |
|   | Centre Newsletter                     |              |               |               |               | 144          |               |              |                        |               |
| Donations / Fundraising                 | Donations                             | 25           | 5,556         |               | 254           | 130          | 262           | 1,528        | 500                    | 100           |
|   | Fundraising                           |              | 48            |               | 82,956        |              |               |              | 416                    |               |
| Sales Revenue                           | Sale of Observer's Handbooks          |              |               |               |               |              | 35            | 25           |                        |               |
|   | Sale of Observer's Calendars          |              | 956           | 242           | 810           | 642          | 220           | 655          |                        | 424           |
|   | Sale of Beginner's Observing Guides   |              |               |               |               |              |               | 25           |                        |               |
|   | Other Publication Sales               |              |               |               |               |              |               |              |                        | 313           |
|   | RASC promotional items                |              | 447           |               |               | 60           | 20            |              | 482                    | 169           |
|   | Other Sales                           |              | 400           |               |               | 340          |               | 70           |                        |               |
| Subscription Revenue                    | Astronomy / Sky & Telescope           |              |               |               |               |              |               |              |                        |               |
|   | Other                                 |              |               |               |               |              |               |              |                        |               |
| Events Revenue                          | Star Parties                          | 237          | 2,640         |               | 1,100         | 1,074        |               | 1,340        |                        |               |
|   | Annual Dinner                         |              | 1,645         |               |               |              | 1,436         |              | 850                    |               |
|   | Astronomy Day                         |              |               |               |               |              |               |              |                        |               |
|   | BIYA                                  |              |               |               |               |              |               |              |                        |               |
|   | Meetings                              |              |               |               |               |              |               |              |                        |               |
|   | Other Events                          |              |               |               |               |              | 18,809        |              |                        |               |
| General Assembly Revenue                | General Assembly                      |              |               |               |               |              |               |              |                        |               |
| Miscellaneous Revenue                   | Interest and Dividends                | 4            | 17            |               | 82            | 254          |               | 235          |                        |               |
|   | Advertising                           |              |               |               |               |              |               |              |                        |               |
|   | Observatory Site                      |              | 270           |               |               |              | 100           |              |                        |               |
|   | Equipment Rentals/Loans               |              | 1,716         |               |               |              |               |              | 150                    |               |
|   | Miscellaneous                         |              | 80            |               | 1,444         | 9            |               | 419          | 2,024                  |               |
| <b>TOTAL REVENUE</b>                    |                                       | <b>1,076</b> | <b>22,178</b> | <b>400</b>    | <b>92,006</b> | <b>5,737</b> | <b>23,234</b> | <b>5,993</b> | <b>6,880</b>           | <b>3,223</b>  |
| <b>EXPENDITURES</b>                     |                                       |              |               |               |               |              |               |              |                        |               |
| Sales Expenses                          | Observer's Handbook                   |              | 63            |               |               |              |               | 58           |                        |               |
|   | Beginner's Observing Guide            |              | 194           |               |               |              |               |              |                        |               |
|   | Observer's Calendar                   |              | 1,259         | 253           | 1,294         | 542          |               | 545          |                        |               |
|   | Other Publications                    |              | 447           |               |               |              | 374           |              |                        |               |
|   | Newsletter                            |              | 437           |               | 733           | 156          |               | 14           |                        | 182           |
|   | RASC promo items                      |              |               |               | 3,364         | 55           | 243           |              | 605                    |               |
|   | Other                                 |              |               |               |               | 274          | 173           | 576          |                        |               |
| Event Expenses                          | Star Parties                          |              | 2,166         |               | 1,379         |              |               | 1,120        |                        | 274           |
|   | Annual Dinner                         | 134          | 1,720         |               |               |              | 1,109         |              | 693                    |               |
|   | Astronomy Day                         |              | 306           |               |               |              |               | 418          | 114                    |               |
|   | BIYA                                  |              | 63            |               |               | 206          |               |              |                        |               |
|   | Meetings                              |              | 1,753         |               | 3,819         | 186          | 350           | 1,151        | 377                    |               |
|   | Other Events                          | 436          | 759           |               | 32,712        |              | 10,556        | 79           | 369                    |               |
| Travel                                  | General Assembly and Council Meetings |              | 2,091         |               | 1,428         | 230          |               |              | 159                    | 400           |
| Administrative Expenses                 | Office Administration                 |              | 542           |               | 582           | 214          | 452           | 97           | 345                    |               |
|   | Equipment and Supplies                |              | 3,652         |               | 9,388         | 65           | 34            |              |                        |               |
|   | Insurance                             |              | 2,395         |               | 550           | 1,188        | 486           |              | 536                    |               |
|   | General Expenses and Audit            |              |               |               |               | 29           |               | 113          |                        |               |
|   | Awards                                | 200          | 580           | 200           | 854           | 89           | 226           | 124          | 650                    |               |
|   | Donations                             |              |               |               | 600           | 220          |               |              |                        |               |
|   | Advertising                           |              |               |               | 2,084         |              |               |              |                        |               |
| Miscellaneous Expenses                  | Observatory and Site Expenses         |              | 2,954         | 55            | 23,922        | 1,563        | 3,158         | 289          | 395                    | 11,796        |
|   | Library                               |              | 1,285         |               |               |              |               |              |                        |               |
|   | Depreciation                          |              |               |               |               | 295          |               |              |                        |               |
|   | Miscellaneous                         | 17           | 888           |               | 293           | 110          | 509           | 1,362        | 982                    |               |
| <b>TOTAL EXPENDITURES</b>               |                                       | <b>787</b>   | <b>23,554</b> | <b>508</b>    | <b>83,002</b> | <b>5,422</b> | <b>17,670</b> | <b>5,946</b> | <b>5,225</b>           | <b>12,652</b> |
| <b>SURPLUS OR DEFICIT ON OPERATIONS</b> |                                       | <b>289</b>   | <b>-1,376</b> |               | <b>9,004</b>  | <b>315</b>   | <b>5,564</b>  | <b>47</b>    | <b>1,655</b>           |               |
| ASSETS                                  | Current assets                        | 5,773        | 31,856        |               | 135,130       | 18,122       |               | 26,281       | 13,394                 | 7,269         |
|   | Capital assets                        | 720          | 24,472        | 2,268         | 54,928        | 16,605       |               |              | 5,000                  | 35,674        |
| LIABILITIES                             |                                       |              | 2,765         |               |               | 234          |               |              |                        |               |

# CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2013

|   |                                       | Mississauga  | C. F. de<br>Montréal | Montréal     | New<br>Brunswick | Niagara       | Okanagan      | Ottawa        | Prince<br>George | Québec     | Regina        |
|---|---------------------------------------|--------------|----------------------|--------------|------------------|---------------|---------------|---------------|------------------|------------|---------------|
| <b>REVENUE</b>                          |                                       |              |                      |              |                  |               |               |               |                  |            |               |
| Membership                              | Membership Fees: Centre Fee           | 3,356        |                      | 32           | 1,336            | 1,379         | 2,221         | 6,186         | 1,731            | 434        | 1,793         |
|   | Membership Fees: Associate            |              |                      |              |                  | 120           | 80            |               |                  |            |               |
|   | Membership Fees: Affiliate            |              |                      |              |                  |               |               |               |                  |            |               |
|   | Membership Fees: other                |              |                      |              |                  |               | 500           |               |                  |            |               |
|   | Centre Newsletter                     |              |                      |              |                  |               |               |               |                  |            |               |
| Donations / Fundraising                 | Donations                             |              |                      | 1,347        |                  | 115           | 4,317         | 297           | 20,000           |            | 728           |
|   | Fundraising                           |              |                      |              | 601              | 135           | 9,545         |               | 2,495            |            | 2,795         |
| Sales Revenue                           | Sale of Observer's Handbooks          |              |                      |              |                  |               | 15            |               |                  | 48         |               |
|   | Sale of Observer's Calendars          | 285          |                      | 345          | 1,170            | 225           | 1,036         | 1,514         |                  | 208        |               |
|   | Sale of Beginner's Observing Guides   |              |                      |              |                  |               |               |               |                  |            |               |
|   | Other Publication Sales               |              |                      |              |                  |               |               |               |                  |            |               |
|   | RASC promotional items                | 815          |                      |              | 125              | 180           | 91            |               |                  |            | 544           |
|   | Other Sales                           | 832          |                      |              |                  |               |               |               | 141              |            |               |
| Subscription Revenue                    | Astronomy / Sky & Telescope           |              |                      |              |                  | 49            |               |               |                  |            |               |
|   | Other                                 |              |                      |              |                  |               |               |               |                  |            |               |
| Events Revenue                          | Star Parties                          |              |                      |              |                  |               |               |               |                  |            | 5,888         |
|   | Annual Dinner                         |              |                      |              |                  |               | 9,749         | 2,520         |                  |            | 1,020         |
|   | Astronomy Day                         |              |                      |              |                  |               |               |               |                  |            |               |
|   | Other Events                          |              |                      |              | 140              |               | 346           |               | 246              |            | 976           |
| General Assembly Revenue                | General Assembly                      |              |                      |              |                  |               |               |               |                  |            |               |
| Miscellaneous Revenue                   | Interest and Dividends                |              |                      | 3,665        |                  | 43            | 11            | 236           |                  |            |               |
|   | Advertising                           |              |                      |              |                  |               |               |               |                  |            |               |
|   | Observatory Site                      |              |                      |              |                  |               |               | 385           | 909              |            |               |
|   | Equipment Rentals/Loans               |              |                      |              |                  |               |               | 110           |                  |            |               |
|   | Miscellaneous                         |              |                      | 1,011        |                  | 277           | 1,193         |               |                  |            |               |
| <b>TOTAL REVENUE</b>                    |                                       | <b>5,288</b> |                      | <b>6,400</b> | <b>3,372</b>     | <b>2,523</b>  | <b>29,314</b> | <b>11,248</b> | <b>25,522</b>    | <b>690</b> | <b>13,744</b> |
| <b>EXPENDITURES</b>                     |                                       |              |                      |              |                  |               |               |               |                  |            |               |
| Sales Expenses                          | Observer's Handbook                   |              |                      |              |                  |               |               |               |                  | 32         | 406           |
|   | Beginner's Observing Guide            |              |                      |              |                  |               |               |               |                  |            |               |
|   | Observer's Calendar                   |              |                      | 321          | 1,268            | 431           | 554           | 1,234         |                  | 158        |               |
|   | Other Publications                    | 371          |                      |              |                  |               |               |               |                  |            |               |
|   | Newsletter                            |              |                      |              |                  |               | 43            |               |                  |            |               |
|   | RASC promo items                      | 707          |                      |              |                  | 154           |               |               |                  |            |               |
|   | Other                                 | 328          |                      |              |                  |               | 17            |               | 80               |            |               |
| Event Expenses                          | Star Parties                          | 721          |                      |              | 519              | 69            |               |               |                  |            | 2,848         |
|   | Annual Dinner                         |              |                      |              |                  |               | 3,681         | 2,723         |                  | 62         | 783           |
|   | Astronomy Day                         |              |                      |              |                  |               |               |               |                  |            |               |
|   | BIYA                                  |              |                      |              |                  |               |               |               |                  |            | 2,019         |
|   | Meetings                              | 905          |                      | 81           | 213              | 663           |               | 146           |                  |            |               |
|   | Other Events                          |              |                      | 324          | 505              |               |               |               | 5,744            |            |               |
| Travel                                  | General Assembly and Council Meetings |              |                      |              | 266              |               | 475           |               |                  |            |               |
| Administrative Expenses                 | Office Administration                 | 55           |                      |              | 29               | 331           | 593           | 414           |                  | 96         |               |
|   | Equipment and Supplies                | 397          |                      |              |                  | 1,194         | 500           | 46            |                  |            | 1,339         |
|   | Insurance                             |              |                      | 1,576        |                  |               | 486           | 2,306         |                  |            | 956           |
|   | General Expenses and Audit            |              |                      |              | 44               | 22            | 1,420         |               | 10,781           | 32         | 770           |
|   | Awards                                |              |                      |              | 73               |               |               | 140           |                  |            | 210           |
|   | Donations                             |              |                      |              |                  | 144           |               | 150           |                  |            |               |
|   | Advertising                           |              |                      |              | 13               |               |               |               | 247              |            |               |
| Miscellaneous Expenses                  | Observatory and Site Expenses         |              |                      | 932          |                  | 188           | 17,971        | 1,381         |                  |            |               |
|   | Library                               |              |                      |              |                  |               |               | 110           |                  |            |               |
|   | Depreciation                          |              |                      |              |                  | 1,099         |               | 1,596         |                  |            |               |
|   | Miscellaneous                         | 163          |                      | 531          |                  | 1,326         |               | 145           |                  |            |               |
| <b>TOTAL EXPENDITURES</b>               |                                       | <b>3,647</b> |                      | <b>3,765</b> | <b>2,930</b>     | <b>5,621</b>  | <b>25,740</b> | <b>10,391</b> | <b>16,852</b>    | <b>595</b> | <b>12,261</b> |
| <b>SURPLUS OR DEFICIT ON OPERATIONS</b> |                                       | <b>1,641</b> |                      | <b>2,635</b> | <b>442</b>       | <b>-3,098</b> | <b>3,574</b>  | <b>857</b>    | <b>8,670</b>     | <b>95</b>  | <b>1,483</b>  |
| ASSETS                                  | Current assets                        | 16,945       |                      | 71,168       |                  | 7,116         | 22,870        | 47,070        |                  | 307        | 12,454        |
|   | Capital assets                        | 433          |                      | 34,377       |                  | 19,609        | 223,113       | 11,117        |                  |            | 71,647        |
| LIABILITIES                             |                                       |              |                      |              |                  |               |               | 345           |                  |            |               |

# CENTRE TREASURERS' REPORTS FOR FISCAL YEAR 2013

|   |                                       | St. John's   | Sarnia     | Saskatoon     | Sunshine Coast | Thunder Bay   | Toronto       | Vancouver     | Victoria     | Windsor      | Winnipeg     |
|---|---------------------------------------|--------------|------------|---------------|----------------|---------------|---------------|---------------|--------------|--------------|--------------|
| <b>REVENUE</b>                          |                                       |              |            |               |                |               |               |               |              |              |              |
| Membership                              | Membership Fees: Centre Fee           | 1,460        | 182        | 2,721         | 1,009          | 1,351         | 18,806        | 4,056         | 2,813        | 1,959        | 5,147        |
|   | Membership Fees: Associate            |              |            |               |                |               | 1,383         |               |              | 20           |              |
|   | Membership Fees: Affiliate            |              |            |               |                |               | 449           |               |              |              |              |
|   | Membership Fees: other                |              |            |               |                |               | 289           |               |              | 630          |              |
|   | Centre Newsletter                     |              |            |               |                |               |               |               |              |              |              |
| Donations / Fundraising                 | Donations                             | 150          |            | 529           | 1,050          | 125           | 5,545         |               | 610          | 1,067        | 779          |
|   | Fundraising                           |              |            | 438           | 12,000         |               | 2,237         |               | 1,816        | 261          |              |
| Sales Revenue                           | Sale of Observer's Handbooks          |              |            |               |                |               | 135           |               |              |              |              |
|   | Sale of Observer's Calendars          | 515          | 167        |               | 211            | 1,140         | 1,692         |               |              | 438          | 735          |
|   | Sale of Beginner's Observing Guides   |              |            |               |                |               | 315           |               |              |              |              |
|   | Other Publication Sales               |              |            |               |                |               |               |               |              |              |              |
|   | RASC promotional items                |              |            |               |                |               | 296           |               |              |              | 396          |
|   | Other Sales                           | 15           |            | 1,136         |                |               | 4,170         | 16,899        | 1,750        |              |              |
| Subscription Revenue                    | Astronomy / Sky & Telescope           |              |            |               |                |               |               |               |              |              |              |
|   | Other                                 |              |            |               |                |               |               |               |              |              |              |
| Events Revenue                          | Star Parties                          |              |            | 19,348        |                |               |               |               |              |              |              |
|   | Annual Dinner                         |              |            |               |                |               |               |               | 1,750        |              |              |
|   | Astronomy Day                         |              |            |               |                |               |               |               |              |              |              |
|   | Other Events                          | 545          |            |               |                |               | 20,745        |               |              |              |              |
| General Assembly Revenue                | General Assembly                      |              |            |               |                | 44,881        |               |               |              |              |              |
| Miscellaneous Revenue                   | Interest and Dividends                | 3            | 1          | 160           | 105            | 128           | 421           | 5,277         |              |              | 25           |
|   | Advertising                           |              |            |               |                |               | 180           |               |              |              |              |
|   | Observatory Site                      |              |            |               |                |               | 9,389         |               |              |              |              |
|   | Equipment Rentals/Loans               |              |            |               |                |               | 21,250        |               |              |              |              |
|   | Miscellaneous                         |              |            | 65            | 66             | 40            | 6,668         |               |              |              |              |
|   | Helm Fund                             |              |            |               |                |               | 2,650         |               |              |              |              |
| <b>TOTAL REVENUE</b>                    |                                       | <b>2,687</b> | <b>350</b> | <b>24,397</b> | <b>14,441</b>  | <b>47,666</b> | <b>96,620</b> | <b>26,232</b> | <b>8,739</b> | <b>4,375</b> | <b>7,082</b> |
| <b>EXPENDITURES</b>                     |                                       |              |            |               |                |               |               |               |              |              |              |
| Sales Expenses                          | Observer's Handbook                   |              |            |               |                |               |               |               |              |              |              |
|   | Beginner's Observing Guide            |              |            |               |                |               |               |               |              |              |              |
|   | Observer's Calendar                   | 579          |            |               | 197            | 1,407         | 1,211         |               |              | 403          | 638          |
|   | Other Publications                    |              |            |               |                |               |               |               |              |              |              |
|   | Newsletter                            |              |            |               |                | 64            | 2,776         | 1,098         | 109          |              | 331          |
|   | RASC promo items                      |              |            |               | 80             |               | 348           |               |              |              |              |
|   | Other                                 |              |            | 918           |                |               |               |               |              |              |              |
| Event Expenses                          | Star Parties                          | 109          |            | 16,398        |                | 103           |               | 13,473        |              | 831          |              |
|   | Annual Dinner                         |              |            |               |                |               |               |               | 1,785        |              |              |
|   | Astronomy Day                         |              |            |               |                |               |               | 883           | 209          |              |              |
|   | BIYA                                  |              |            |               |                |               |               |               |              |              |              |
|   | Meetings                              | 148          |            |               | 1,530          |               |               | 2,235         |              | 933          | 718          |
|   | Other Events                          |              |            |               |                | 41,228        |               |               | 822          | 40           | 682          |
| Travel                                  | General Assembly and Council Meetings |              |            |               |                |               |               | 1,021         | 192          |              |              |
| Administrative Expenses                 | Office Administration                 |              |            | 692           |                |               | 4,000         |               |              |              | 181          |
|   | Equipment and Supplies                | 68           |            |               |                |               |               | 338           | 151          | 190          |              |
|   | Insurance                             | 525          |            | 1,627         |                |               | 3,341         | 748           | 500          | 2,256        | 578          |
|   | General Expenses and Audit            |              |            |               | 542            | 21            | 4,000         |               | 213          |              | 48           |
|   | Awards                                | 75           |            |               |                |               | 618           | 555           | 285          |              | 434          |
|   | Donations                             |              |            |               |                |               |               |               |              |              |              |
|   | Advertising                           |              |            |               |                |               |               |               |              |              |              |
| Miscellaneous Expenses                  | Observatory and Site Expenses         | 102          |            | 1,260         | 12,964         |               | 20,135        | 306           | 311          | 980          |              |
|   | Library                               |              |            |               |                |               |               |               | 80           |              |              |
|   | Depreciation                          |              |            | 1,282         |                |               |               | 1,004         |              |              |              |
|   | Miscellaneous                         | 28           |            | 363           |                | 96            | 8,711         | 2,052         | 810          | 67           | 2,160        |
| <b>TOTAL EXPENDITURES</b>               |                                       | <b>1,633</b> | <b>0</b>   | <b>22,540</b> | <b>15,313</b>  | <b>42,919</b> | <b>45,140</b> | <b>23,713</b> | <b>6,298</b> | <b>4,869</b> | <b>5,770</b> |
| <b>SURPLUS OR DEFICIT ON OPERATIONS</b> |                                       | <b>1,054</b> | <b>350</b> | <b>1,857</b>  | <b>-873</b>    | <b>4,747</b>  | <b>51,480</b> | <b>2,519</b>  | <b>2,441</b> | <b>-494</b>  | <b>1,312</b> |
| ASSETS                                  | Current assets                        | 27,670       | 1,981      | 41,758        | 13,989         |               | 89,091        | 369,602       | 8,408        | 5,267        | 12,827       |
|   | Capital assets                        |              |            | 25,364        | 19,579         |               | 401,438       | 11,594        | 35,925       | 80,000       |              |
| LIABILITIES                             |                                       |              |            | 9,716         | 33,568         |               |               | 7,591         |              |              |              |



# OFFICERS AND COUNCILS OF THE CENTRES—2014

## BELLEVILLE CENTRE

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

President: Greg Lisk  
Vice-President: David Cotterell  
Treasurer: Garth Penn  
Secretary: Joanne Burns  
National Representative: Don Town

## CALGARY CENTRE

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Honorary President: Jennifer Howse  
Past President: Andrew Jones  
President: Jason Nishiyama  
First Vice-President: Steve Donaldson  
Second Vice-President: Victor Barbu  
Secretary: Robyn Foret  
Treasurer: Greg Bridger  
National Representatives: Heather Laird  
Roger Nelson

Other Directors: George Cavanaugh  
Heather Laird  
Logan Kameda  
Luke MacMillan  
Larry McNish  
Katherine Peterson  
Ed Reddy  
Doug Thorp

## CHARLOTTETOWN CENTRE

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President: Clair Perry  
Vice-President: Brian Gorveatt  
Treasurer: Ken Fall  
Secretary: Jane Vicary  
National Representative: Brian Gorveatt

## EDMONTON CENTRE

c/o TELUS World of Science  
11211-142 Street  
Edmonton AB T5M 4A1  
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Honorary President: Dr. Douglas Hube  
President: Ross Sinclair  
Past President: Peter Hall  
Vice-President: Luca Vanzella  
Treasurer: Jay Lavender  
Secretary: Kent Martens  
National Representative: vacant  
Public Education Director: Geoff Robertson  
Fundraising Co-ordinator: Peter Hall  
Councillors: Orla Aaquist  
Clayton Knoll  
Sharon Morsink  
John Wooley

Internal Communications Officer: Michael Ward  
Observing Group Director: Larry Wood  
Membership Secretary: Massimo Torri  
New Member Advisor: Murray Paulson

*Stardust* Editor: Michael Ward  
Web Site Coordinator: Luca Vanzella  
Library Coordinator: Mark Zalcik  
Equipment Director: Ross Sinclair

Light-Pollution Abatement Chair: Bruce McCurdy  
Telescope Rentals: Chris Meerveld  
Outreach Coordinator: Dave Robinson  
SkyScan Liaison: Dave Cleary  
Dark-Sky Preserve Coordinator: Sherrilyn Jahrig

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President: Paul Heath  
First Vice-President: Graham Rose  
Second Vice-President: Karl Penny  
Treasurer: Ian Anderson  
Secretary: Chris Young  
National Representative: Pat Kelly  
Librarian: Megan Milner  
Observing Chair: Sean Dzafovic  
*Nova Notes* Editor: Quinn Smith  
Councillor: Wes Howie

## HAMILTON CENTRE

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Past President: Andy Blanchard  
President: Gary Colwell  
Vice-President: Bill Leggett  
Treasurer: David Surette  
Secretary: Mark Pickett  
National Representative: Gary Bennett  
Other Directors: Jason Blane  
Roger Hill  
Shawn Preston

## KINGSTON CENTRE

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President: Kim Hay  
Past President: Susan Gagnon  
Vice-President: Kevin Kell  
Treasurer: Steve Hart  
Secretary: Steve Hart  
National Representative: David Maguire  
Directors: Walter MacDonald

## KITCHENER-WATERLOO CENTRE

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Past President: Steve Holmes  
Vice-President: Rick Burke  
Vice-President: Terry Torra  
Treasurer: Allan Douglas  
Secretary: Jim Goetz  
National Representative: Bernd Mueller  
Webmaster: Brian Hollander  
Observing Co-ordinator: Clarke Muir  
Elementary Schools Outreach Co-ordinator: George Peer  
Scouts/Girl Guides Outreach Co-ordinator: Phil Lacasse  
Light-Pollution Abatement Co-ordinator: Steve Holmes

## LONDON CENTRE

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Honorary President: Peter Jedicke  
President: Rick Saunders  
Past President: David McCarter  
Vice-President: Patrick Whelan  
Treasurer: Bill Gardner  
Secretary: Michael Jager  
National Representative: Craig Levine

Librarian & Higher Education Liason:  
Robert Duff  
Public Outreach Co-ordinator:  
David McCarter

Observers' Chair: Mike Roffey  
ATM Chair: Mike Hanes  
Observatory Committee Chair:  
Pete Raine  
Women's Programs: Cheri Raine  
Youth Programs: Adam

Priestap-Suttis  
*Polaris* Newsletter Editor: Patrick Whelan  
Councillor: David L. Clark  
Councillor: John Kulczycki  
Councillor: John Rousom  
System Administrator: Jeff Harrison  
Webmaster: Rick Saunders

## MISSISSAUGA CENTRE

PO Box 98011  
2126 Burnhamthorpe Rd W  
Mississauga ON L5L 5V4  
[www.mississauga.rasc.ca](http://www.mississauga.rasc.ca)  
[secr@mississauga.rasc.ca](mailto:secr@mississauga.rasc.ca)

Past President: Randy Attwood  
President: Leslie Strike  
Vice-President: Andrew Opala  
Treasurer: Allan Connery  
Secretary: Chris Malicki  
National Representative: Andrew Opala  
Directors: James Beckwith  
Simon Claughton  
Gerard Foraie  
John Golla  
John Marchese

## CENTRE FRANCOPHONE DE MONTRÉAL

CP 206 Station St-Michel  
Montréal QC H2A 3L9  
(514) 201-3889  
[www.lasam.ca](http://www.lasam.ca)  
[scattol@videotron.ca](mailto:scattol@videotron.ca)

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

## MONTRÉAL CENTRE

PO Box 39061  
Montréal QC H3B 0B2  
[www.rascmontreal.org](http://www.rascmontreal.org)  
[info@rascmontreal.org](mailto:info@rascmontreal.org)

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

1068 Kinglsey Road  
Birdton NB E3G 6G4  
[www.nb.rasc.ca](http://www.nb.rasc.ca)  
[secretary@nb.rasc.ca](mailto:secretary@nb.rasc.ca)

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

Education Committee Chair:  
Don Kelly  
LPA Chair: Chris Weadick  
Star Party Committee Chair:  
June MacDonald

Newsletter Editor: Peter Jensen  
Webmaster: Marc Arsenaault  
Councillors: Guy Arnold  
Paul Grey  
Emma MacPhee  
Chris Weadick

Librarian: Ted Dunphy  
Equipment Manager: Eldon Rogers

## NIAGARA CENTRE

c/o Dr. Brian Pihack  
4245 Portage Road  
Niagra Falls ON L2E 6A2  
[www.astronomyniagara.com](http://www.astronomyniagara.com)  
[stansam@niagara.com](mailto:stansam@niagara.com)

Past President: Stan Sammy  
President: Brian Pihack  
Vice-President: Stan Sammy  
Treasurer: Robert Lewis  
Secretary: Philip Downey  
National Representative: vacant  
Directors: Darlene Marano  
David Perry  
Glen Pidsadnick  
Mark Roberts

## OKANAGAN CENTRE

285 Terai Court  
Kelowna BC V1X 5X6  
[www.ocrasc.ca](http://www.ocrasc.ca)  
[cohare@shaw.ca](mailto:cohare@shaw.ca)  
Past President: Dave Gamble  
President: Colleen O'Hare  
Vice-President Kelowna: Guy Mackie  
Vice-President Penticton: Ryan Ranson  
Vice-President Vernon: Jerry Thompson  
Treasurer: Zoli Boda  
Secretary: Dennis Krause  
National Representative: Richard Christie  
Directors: Raffaele Lachianca  
Patricia Reid  
James M. Tisdale

## OTTAWA CENTRE

PO Box 33012  
1363 Woodroffe Ave  
Ottawa ON K2C 3Y9  
[www.ottawa.rasc.ca](http://www.ottawa.rasc.ca)  
[contact@ottawa-rasc.ca](mailto:contact@ottawa-rasc.ca)

Past President: Al Scott  
President: Gary Boyle  
Vice-President: Gordon Webster  
Treasurer: Oscar Echeverri  
Secretary: Chris Teron  
Meeting Chair: Mike Moghadam  
Councillors: Yves Demers  
Stephen Nourse  
Carmen Rush

National Representative: Rick Wagner  
Bill Wagstaff

### Council Appointed Positions

Librarian: Estelle Rother  
WebMaster: Chuck O'Dale  
*AstroNotes* Editor: Drew Hodge  
Janet Tulloch  
F.L.O. Director: Ron St Martin  
Public Outreach: Mike Moghadam  
Hospitality: Art & Anne Fraser  
Membership: Art Fraser  
Telescope Library: Al Scott

**PRINCE GEORGE CENTRE**

7365 Tedford Rd  
 Prince George BC V2N 6S2  
 (250) 964-3600  
[www.vts.bc.ca/pgrasc](http://www.vts.bc.ca/pgrasc)  
[rascpg@telus.net](mailto:rascpg@telus.net)

Past President: Gilbert Self  
 President: Blair Stunder  
 Vice President: Robert Nelson  
 Treasurer: Glen Harris  
 Secretary: Glen Harris  
 National Representative: vacant  
 Other Directors: Gilbert Self  
 James Van Doren

**CENTRE DE QUÉBEC**

2000, boul Montmorency  
 Québec QC G1J 5E7  
[www.sracquebec.ca](http://www.sracquebec.ca)  
[info@sracquebec.ca](mailto:info@sracquebec.ca)

Président: Steve Lévesque  
 Vice-Président:  
 Trésorier: Pierre Desrosiers  
 Représentant national: Pierre Desrosiers  
 Secrétaire: Daniel Tardif  
 Responsable des observations:  
 Marc Leduc

**REGINA CENTRE**

PO Box 20014  
 Regina SK S4P 4J7  
 (306) 751-0128  
[regina.rasc.ca](http://regina.rasc.ca)

President: Chris Beckett  
 Vice-President: Mike O'Brien  
 Treasurer: Rob Sheppard  
 Secretary: Neil Slater  
 National Representative: Peter Hagar  
 Past President: Shane Ludtke  
 Librarian: Ross Parker  
 Webmaster: Chris Beckett  
 Kalium Observatory: Ron Haughey  
 Davin Dark Site: Dave Barrie  
 Equipment Director: Ron Haughey  
 Newsletter Editor: Shane Ludtke  
 Twitter: Ferhat Seglam

**ST. JOHN'S CENTRE**

c/o Randy Dodge  
 206 Frecker Dr  
 St John's NL A1E 5H9  
[www.stjohnsrasc.ca](http://www.stjohnsrasc.ca)  
[info@stjohnsrasc.ca](mailto:info@stjohnsrasc.ca)

Past President: Richard Newman  
 President: Chris Stevenson  
 Vice-President: Garry Dymond  
 Treasurer: Doug Grouchy  
 Secretary: Randy Dodge  
 National Representative: Marcellus Redmond  
 Webmaster: Craig Peterman  
 Observing Director: Robert Babb  
 Librarian: Fred Smith  
 Membership: Marcellus Redmond

**SARNIA CENTRE**

c/o Marty Cogswell  
 6723 Pheasant Lane  
 RR1 Camlachie ON N0N 1E0

President: Ralph De Jong  
 Vice-President: Randi Mathieu  
 Secretary: Martin Cogswell  
 Treasurer: John (Marty) Webster  
 National Representative: Joe Clements

**SASKATOON CENTRE**

PO Box 317 RPO University  
 Saskatoon SK S7N 4J8  
 (306) 857-4707  
[www.usask.ca/rasc](http://www.usask.ca/rasc)  
[skstars@shaw.ca](mailto:skstars@shaw.ca)

Past President: Jeff Swick  
 President: James Gorkoff  
 Vice-President: Jim Goodridge  
 Treasurer: Norma Jensen  
 Secretary: Tenho Tuomi  
 National Representative: Tenho Tuomi  
 Events Coordinator: Barb Wright  
 Fundraising Coordinator: Jim Goodridge  
 Membership Coordinator: Mark de Jong  
 Observing Coordinator: Larry Scott  
 Sleaford Site Coordinator: Darrell Chatfield  
 Councillor at-large: Les Dickson

**SUNSHINE COAST CENTRE**

5711 Nickerson Road  
 Sechelt BC V0N 3A7  
[www.coastastronomy.ca](http://www.coastastronomy.ca)  
[info@coastastronomy.ca](mailto:info@coastastronomy.ca)

Past President: William Clark  
 President: Michael Bradley  
 Vice-President: Adrian Payne  
 Treasurer: Stephen Oakes  
 Secretary: Bruce Fryer  
 National Representative: Bill Clark  
 Other Directors: Charles Ennis  
 Justin French  
 Scott Harlow

**THUNDER BAY CENTRE**

286 Trinity Cres  
 Thunder Bay ON P7C 5V6  
 (807) 475-3406  
 www.tbrasc.org  
 thunderbayastronomer@gmail.com

Past President: Bruce Miron  
 President: Brendan Roy  
 Vice-President: Joua DeSousa  
 Treasurer: Bridgitte Schaffer  
 Secretary: Andreas Buchholz  
 National Representative: Ken Kaus

**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  
 Past President: Dr. Ralph Chou  
 Past President: Tony Horvatin  
 President: Charles Darrow  
 Vice-President: Peter Hiscocks  
 Vice-President: Paul Delaney  
 Treasurer: Alexander Masterton  
 Secretary: Eric Briggs  
 National Representatives: Eric Briggs

Recorder:  
 Councillors:

Rajesh Shukla  
 Laila Zichmanis  
 Rajesh Shukla  
 Gilles Gaudet  
 Leslie Harvey  
 Michelle Johns  
 Dietmar Kupke  
 Stephen McKinney  
 Stuart McNair Paul  
 Mortfield Jason  
 Toliopoulos  
 Laila Zichmanis

**VANCOUVER CENTRE**

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

Honorary President: Dr. John MacDonal  
 President: Mark Eburne  
 Vice-President: Suzanna Nagy  
 Treasurer: Bruce Hutchison  
 Secretary: Scott McGillivray  
 National Representative: Doug Montgomery

Director of Telescopes: Harvey Dueck  
 Librarian: William Fearon  
 Membership: Rohit Grover  
 Events Co-ordinator: Suzanna Nagy  
 Education: Bill Burnyeat  
 Observatory Chair: Alan Jones  
 Webmaster: Harvey Dueck  
 LPA Chair: Jim Ronback  
 Nova Editor: Gordon Farrell  
 Observing: Scott McGillivray  
 Public Relations: Scott McGillivray  
 Speakers: Barry Shanko  
 Merchandise: Kenneth Lui  
 At Large: Terry McComas

**VICTORIA CENTRE**

3836 Pitcombe Pl  
 Victoria BC V8N 4B9  
 (250) 508-3192  
 www.victoria.rasc.ca  
 treasurer@victoria.rasc.ca

Past President: Lauri Roche  
 President: Nelson Walker  
 1st Vice-President: Charles Banville  
 2nd Vice-President: Sherry Buttner  
 Treasurer: Bruce Lane  
 Secretary & Recorder: Deb Crawford  
 Librarian: Michael Michaud  
 Telescopes: Sid Sidhu  
 Past President: Lauri Roche  
 National Representative: Mark Bohlman  
 Skynews Editor: Diane Bell  
 Membership Co-ordinator: Sherry Buttner  
 Webmaster: Joe Carr  
 Observing Chair: Bill Weir

**WINDSOR CENTRE**

c/o Greg Mockler  
 1508 Greenwood Road  
 Kingsville ON N9V 2V7  
 www.rascwindsor.com

Honorary President: Dr. William Baylis  
 Past President: Paul Pratt  
 President: Rick Marion  
 1st Vice-President: Brian Thomas  
 2nd Vice-President: Mike Mastronardi  
 Treasurer: Greg Mockler  
 Secretary: Matt McCall  
 National Representative: Mike Mastronardi

**WINNIPEG CENTRE**

PO Box 2694  
 Winnipeg MB R3C 4B3  
 www.winnipeg.rasc.ca  
 ras1@winnipeg.rasc.ca

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



# 2014 AWARD WINNERS

**Ken Chilton Prize**

Kathryn Gray (Halifax)  
Nathan Gray (Halifax)

**Service Award**

Jay Anderson (Winnipeg)  
Susan Gagnon (Kingston)  
Dave Gamble (Okanagan)  
Dr. James Hesser (Victoria)  
Greg Lisk (Belleville)  
Chris Stevenson (St. John's)  
Mary Lou Whitehorne (Halifax)

**Fellowship Award**

Randy Attwood (Mississauga)  
Dr. Roy Bishop (Halifax)  
Peter Broughton (Toronto)  
Dr. James Hesser (Victoria)

**Chant Medal**

(not awarded)

**The Plaskett Medal**

Dr. Andrew Pon  
(University of Victoria)

**Simon Newcomb Award**

not awarded

**Qilak Award**

Dr. Howard Trottier (Vancouver)

# PAST AWARD WINNERS

Below is a list of former winners of the Chant Medal, Ken Chilton Prize, Plaskett Medal, Service Award, and Simon Newcomb Award.

For names before 2000, please refer to "Looking Up—A History of the RASC" by Peter Broughton. [www.rasc.ca/publications/lookingup/index.shtml](http://www.rasc.ca/publications/lookingup/index.shtml)

## 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)
- 2009 Dr. Geoff Gaherty (Toronto)

## 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.

- 2001 Michael Boschat (Halifax)
- 2002 Vance Petriew (Regina)
- 2003 Doug George (Ottawa)  
Peter Ceravolo (Ottawa)  
Paul Boltwood (Ottawa)  
Jon Buchanan (Ottawa)  
Glenn LeDrew (Ottawa)

- 2005 Attila Danko (Ottawa)
- 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)

## 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.

- 2000 Dr. Alexei Razoumov (British Columbia)
- 2001 Dr. Peter Brown (Western)
- 2002 Dr. Edward W. Thommes (Queen's)
- 2003 Dr. Tracy Webb (Toronto)
- 2004 Dr. Jo-Anne C. Brown (Toronto)
- 2005 Dr. Christian Marois (Montréal)
- 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)

## 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);
- 2011 Mayer Tchelebon (Toronto)
- 2012 Randall Rosenfeld (Unattached)
- 2013 Dave Lane (Halifax)

## 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)
- 2013 Robert Duff (London)

## 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.*

2000 Phil Johnson (Calgary)  
 2001 John Rousom (London)  
 David G. Turner (Halifax)  
 2002 (Not awarded)  
 2003 David McCarter (London)  
 2004 David Clark (London)  
 Jim Failes (Okanagan)  
 Art Fraser (Ottawa)  
 Guy Nason (Toronto)  
 Stan Runge (Winnipeg)

2005 J. Randy Attwood (Toronto)  
 Dr. Robert Garrison (Toronto)  
 2006 Ted Bronson (Thunder Bay)  
 Mark Kaye (Hamilton)  
 Kevin Kell (Kingston)  
 2007 Dr. Rajiv Gupta (Vancouver)  
 Bruce McCurdy (Edmonton)  
 2008 Dennis Grey (Toronto)  
 Leslie Harvey (Toronto)  
 Tony Horvatin (Toronto)  
 2009 Clint Shannon (Halifax)  
 Robert Duff (London)  
 Kim Hay (Kingston)  
 Richard Huziak (Saskatoon)  
 Walter MacDonald (Kingston)  
 Al Seaman (Ottawa)

Patrice Scattolin (C.F. de Montréal)  
 Alan Whitman (Okanagan)  
 2010 Guy Mackie (Okanagan)  
 Bryan Kelso (Okanagan)  
 Jim Tisdale (Okanagan)  
 Barry Matthews (Ottawa)  
 Curt Nason (New Brunswick)  
 2011 Robert Dick (Ottawa)  
 2012 Roland Dechesne (Calgary)  
 James Edgar (Regina)  
 Fred Smith (St. John's)  
 2013 Larry McNish (Calgary)  
 Dietmar Kupke (Toronto)  
 Brian McCullough (Ottawa)

## 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)

1999 Terence Dickinson (Toronto)  
 2001 Dan Falk (Toronto)  
 2002 Dr. David Levy (Kingston)  
 2003 Alister Ling (Edmonton)  
 2004 Mary Lou Whitehorne (Halifax)  
 2006 Dr. Warren Finlay (Edmonton)

2007 Alan Dyer (Unattached, Canada)  
 2008 Gary Seronik (Victoria)  
 2009 James Edgar (Regina)  
 2011 Jay Anderson (Winnipeg)  
 2012 Randall Rosenfeld (Unattached)  
 2013 Alan Whitman (Okanagan)

## HONORARY MEMBERS OF THE RASC

Dr. Oscar Álvarez-Pomares (Cuba)  
 Dr. William Bottke (United States)  
 Dr. David L. Crawford (United States)  
 Rev. Robert Evans (Australia)  
 Dra. Julieta Fierro (Mexico)

Prof. Andrew Fraknoi (United States)  
 Dr. Owen Gingerich (United States)  
 Dr. Stephen W. Hawking (United Kingdom)  
 Dr. Jean Meeus (Belgium)  
 Dr. Jay Pasachoff (United States)

Dr. P.J.E. (Jim) Peebles (United States)  
 Dr. Sara Seager (Canada)  
 Dr. William Sheehan (United States)  
 Dr. Carolyn Shoemaker (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- Dr. John Percy

### Presidents

1998-2000 Randy Attwood  
 2000-2002 Robert Garrison  
 2002-2004 Rajiv Gupta  
 2004-2006 Peter Jedicke  
 2006-2008 Scott Young  
 2008-2010 Dave Lane  
 2010-2012 Mary Lou Whitehorne  
 2012- Glenn Hawley

### Secretaries

1999-2005 Kim Hay  
 2005-2007 Stan Runge  
 2007- James Edgar

### Treasurers

1998-2004 Michael Watson  
 2004-2006 David Clark  
 2006-2007 Alan Whitman  
 2007-2012 Mayer Tchelebon  
 2012- Denis Grey

## GENERAL ASSEMBLIES—2000 TO 2016

*The following Centres hosted the General Assembly from 2000 to 2014:*

2000 Winnipeg  
 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

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

2015 Halifax  
 2016 Regina