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# BULLETIN

La Société  
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The approach of the December 9th total lunar eclipse. Photograph by Mary Lou Whitehorne.

1992

*Annual Report*

1992



## BULLETIN

is a publication of the Royal Astronomical Society of Canada and is distributed together with the society's *Journal*. It contains articles on current activities of the R.A.S.C. and its centres across Canada, as well as articles from members and non-members which are of general interest to members of the society. Manuscripts should be submitted to the editor at the address below. Inquiries about the society should be directed to its national office at 136 Dupont Street, Toronto, Ontario, Canada M5R 1V2 (416) 924-7973.

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### President's Report

During 1992, Canadians suffered through a severe economic recession. At the same time the nation went through tremendous political uncertainty with unprecedented numbers of citizens participating in polls, debates and forums on the constitutional future of the country. The society mirrored these realities. For the first time ever, members exercised their right to vote by proxy and turned down a fee increase which had been approved by the national council. Members were also given the opportunity to express their opinions directly in a survey on a wide range of issues connected with all facets of the society's operations. The results are still being compiled but are sure to be the focus of long-range planning for the society's future.

Three initiatives backed by the national council merit special mention. Leo Enright produced the first edition of the *Beginner's Observers Guide*. It is a first-rate introduction to the night sky and will surely be widely used by Girl Guides, Boy Scouts and many others who just want help in taking their first steps in astronomy. The Vancouver Centre generously agreed to prepare and publish an R.A.S.C. astronomical calendar. The months are handsomely illustrated with astrophotos supplied by members and the daily notes include celestial events and the times of moonrise and moonset. Finally, the constitution committee has issued a set of sample centre bylaws which promise to be invaluable for new centres or for those redrafting their constitutions.

Of course, the ongoing work of the society requires the concerted effort of many volunteers. There are thirteen national committees, all helping in special ways to advance the cause of astronomy in Canada. The editors of the *Journal*, *Bulletin*, and *Observer's Handbook* carry an extra large load and deserve particular thanks for the outstanding publications they turn out. To the other officers and the executive secretary I would add my personal thanks. They are a super group of intelligent, dedicated people who make the society run like magic. My predecessor, Damien Lemay, has been an inspiration. No other amateur in the history of the society has so successfully combined an active program of observing with the duties of leadership.

The activities in the twenty-two centres are the lifeblood of the society. Their annual reports testify to an amazing variety of meetings, observing sessions, star nights and Astronomy Day displays, observatory tours, school visits and astronomy classes, all made possible by those who have accepted responsibility. The society has also provided many individuals with the opportunity to experience the incomparable satisfaction of personal achievement. Some have made their own telescopes, or hunted down all of the Messier objects. Others may have written their first item for a centre newsletter or spoken at a member's night. Only those who participate know how good it feels. I hope all members will make a conscious effort to help the society in some way. Even a few kind words to a new member can make a difference to our effectiveness.

Finally, a round of applause goes to the Calgary Centre for hosting an outstanding General Assembly. The field trip to the Royal Tyrell Museum of Palaeontology was a perfect event to complement the Helen Sawyer Hogg Lecture, "The Cretaceous/Tertiary Boundary Impact (or The Dinosaurs Didn't Have a Chance)", delivered by Dr. Alan Hildebrand and co-sponsored by C.A.S.C.A. The G.A.'s always provide a delightful opportunity to make new friends and renew old acquaintances from coast to coast. There is no better way to share our common interests and to celebrate Canada Day so I will hope to see you all in Halifax this July.

**Peter Broughton, President**

**A**s I near the end of my second (and last) three year term as national secretary, I think it is appropriate to broaden the scope of my "annual" report a little. In any case, in my experience, our presidents have done a remarkable job of summarising the year's highlights and have seldom left me with anything interesting to add!

I began as national secretary in 1987 and have had the privilege to serve you under four presidents – Mary Grey, Lloyd Higgs, Damien Lemay and Peter Broughton. Each one of them, of course, has brought their own style and personality to that office, but they have some features in common. First and foremost in my mind is that they are all warm, friendly individuals – gently guiding the society, listening patiently and carefully to the concerns of National Council and the general membership – not trying to impose their views about the way things should be run. They are also dedicated individuals who have given generously of their time to society matters. The society is extremely fortunate to have found such people in its ranks.

Two special highlights of my term have been the addition of centres in Thunder Bay (1988) and Regina (1989). This reminds me that the centres are our strength – their reports which follow are testaments to their vitality. Recently, there has been some discussion of ways to reduce the turn-over rate of members, which would appear to be about 20% per annum. If we could retain even half of the members who leave each year we would grow at 10% per annum! This is a project for the centres, as the personal contact which centre activities can provide are surely the key to success in this area. Phone calls and other forms of personal contact with those who have not renewed may well bring a valuable return. Perhaps it is time for each centre to designate a particular officer to be in charge of recruitment and retention?

The membership figures as of 1992-09-30 are compared with those of previous years in the following table:

CENTRES	1992	1991	1990	1989	1988	1987	1986
Calgary	197	192	213	277	213	242	240
Edmonton	125	121	130	123	136	115	117
Halifax	138	160	174	171	138	145	121
Hamilton	99	86	87	76	86	84	79
Kingston	50	52	48	38	35	46	44
Kitchener-Waterloo	25	24	34	30	32	29	19
London	46	39	48	46	43	46	46
C.F. de Montréal	36	35	36	38	43	39	44
Montréal	110	99	116	123	103	111	118
Niagara	48	61	61	81	64	48	54
Ottawa	243	258	263	254	228	241	276
Québec	65	36	70	73	60	74	75
Regina	21	29	57	-	-	-	-
St. John's	38	34	30	16	19	22	18
Sarnia	11	8	8	12	8	11	19
Saskatoon	35	43	47	42	45	41	48
Thunder Bay	38	29	31	40	-	-	-
Toronto	855	921	1038	1022	1052	1035	1123
Vancouver	177	109	132	167	167	147	116
Victoria	129	127	127	137	135	143	146
Windsor	41	46	56	46	49	48	52
Winnipeg	45	56	70	59	60	61	69
UNATTACHED							
Canada	268	269	275	306	301	318	298
U.S.A.	258	291	328	351	306	369	371
Overseas	53	53	60	58	62	57	57
Honorary	15	14	14	14	14	13	14
TOTAL	<b>3165</b> 3166	3192	3553	3600	3399	3534	3564

It is with regret that I must inform you of the deaths of the following members in 1992: Peter Curtis (Toronto); George Hampton (Ottawa); Dale McNabb (Vancouver); Gerhard Rickertsen (Toronto); John Ross (Winnipeg) and Rev. Cyril T. Youll (Unattached - Canada)

One constant, of course, in all the change in the society is our executive secretary, Rosemary Freeman. She has been an invaluable guide for me and is single-handedly responsible for the day-to-day operation of the society. I am sure that you join me in offering her heart-felt thanks for a job well done.

I have enjoyed my time in office and meeting many of you in person. Thank you for giving me the opportunity to serve as your secretary.

**David A. Tindall, National Secretary**

Secretary's Report

Nine general meetings were held in 1992.

# Calgary

January 16	Presentations by Ruth Lewis, Bob Loblaw and John Mirtle
February 20	Edmonton exchange speaker Alister Ling
March 19	<b>Seyfert Galaxies</b> by Dr. Jack Penfold
April 16	Kingston exchange speaker Ian Levstein
May 21	<b>The State of Science in Canada</b> by Dr. Sun Kwok
June 18	Barbeque at the Wilson Coulee Observatory
September 18	<b>Zenith Auroral Convergence</b> by Fr. Lucien Kemble
October 15	<b>Teaching Astronomy</b> by Dr. Chris Stagg
November 17	<b>Radio Astronomy</b> by Dr. Russ Taylor; Annual elections

Three public star parties were held in 1992, two at Fish Creek Park, on May 9th and October 3rd, and one at Zoonival on January 8th. Despite adverse weather conditions, several hundred people turned out for each of them. The Fish Creek Park site is one of our favourites, not the least because it is down in a valley and protected from much of the direct lights of the city. We use the staff parking lot of the Bow Valley Ranch Visitor Centre, the park's headquarters. This lot is paved and has rows of plug-ins for our drives. It is also sheltered by some buildings from the headlights of the public parking lot. We have access to the visitor centre facilities where indoor displays, videos and astronomical talks are given, describing what we can hope to see outside.

Zoonival is held every year, usually in January or February at the Calgary Zoo. The zoo remains open late this one night, with the primary intention that people can see nocturnal animals during their active period. People whose daily work schedules do not allow them to visit the zoo during normal hours can avail themselves of this opportunity, too. We are invited each year to set up our scopes on the zoo grounds. This has proven to be extremely popular. There is, to be sure, more light at the zoo than at Fish Creek, but that just gives us an opportunity to point out the extent of the light pollution to the public. Some 4 000 to 5 000 people attended this event.

Twenty-seven tour groups, totalling around 450, mostly school age children, were shown around our Wilson Coulee Observatory. Depending on the age of the group, a slide or video presentation is selected, and if the skies are clear everyone will get to look through (and not just at) our C14. We also sent representatives on eleven school visits, where groups of fifty or so students at a time have a chance to hear about astronomy and to talk with one of our members during regular school hours.

The three introductory astronomy courses held in 1992 (in conjunction with the Department of Continuing Education) attracted a total of seventy-three students, many of whom later decided to become members. With astronomy not occupying a very prominent place in the school system, this course fills a much needed niche.

The fight against light pollution continues. The Calgary Centre is still a proud institutional member of the International Dark Sky Association. We have participated in public hearings in opposition to a housing development that a company intends to build on land adjacent to our observatory and so far have succeeded (with the help of other local residents) in blocking the project. We maintain a vivid photographic display board showing the veils of light pollution which we use at public events.

One of our members is a computer bulletin board operator and he set up an R.A.S.C. area on his board. This year we joined with several other centres in Canada in starting a small-scale network based on the existing Fidonet system. We can access Internet E-mail nodes from Fidonet as well.

The 1992 Calgary General Assembly of the Royal Astronomical Society of Canada is over and we Calgarians can now look forward to going to the Halifax one in 1993 where we can relax and let someone else do all of the worrying and working that organizing a G.A. takes. The critics (fellow RASCals from across the land that have previously been to these events) were lavish in their praise for our efforts and we feel we can honestly give ourselves a collective pat on the back for a job well done.

127 full delegates and forty associates registered for the General Assembly, making it one of the best attended western ones ever. Prizes were given out in a number of areas. The best centre display was won by the Calgary Centre. The best individual display was won by Robert Dick of the Ottawa Centre, who presented his eclipse shadow band work. The best youth display was won by the Calgary Centre Youth Group for their scale model of the solar system. The best instrumentation award went to Dave Lane of Halifax for his micro-guider electronic setting circles. Astrophoto awards went to John Mirtle of Calgary for prime focus, and to Bruce Shier, also of Calgary, in the piggyback and eyepiece projection categories. The Murphy Slide prize was won by Steven Spinney of Toronto for his "double eclipse double exposures" and the Edmonton Centre's "Scope Doctor" presentation took the song contest.

The Calgary Centre's new bylaws received approval in principle from the national bylaws committee during the G.A., much to the relief of the centre bylaws committee. We were able to vote on them at our Annual General Meeting in November, and the centre membership accepted them. As soon as we can get official national approval we will have them in place.

**Glenn Hawley, Secretary**

The Edmonton Centre had another worthwhile and productive year in 1992. Many members achieved personal accomplishments, while the society as a whole increased its visibility and the popularity of astronomy in the community. The centre thrived under the laid-back leadership style of president Murray Paulson. Membership remained stable at about 135.

# Edmonton

**Casino:** Undoubtedly the highlight of the year was the successful operation of a casino. As a non-profit society, the centre qualified for sponsorship of a casino under the aegis of the Alberta Gaming Commission. We had experienced an unsuccessful first venture in January 1990, in which all our volunteer hours went for nought and we were saved from losing money only by the obligatory "no-loss agreement". Perseverance won out in the end as we applied for a second casino which was held in April of 1992 at the facility of Casino ABS. Franklin Loehde proved an able casino general manager, organizing sufficient volunteers to man the facility for two twelve-hour days. The event succeeded beyond our wildest dreams, achieving an after-expense profit of approximately \$48,000. The Edmonton Centre then had the enviable assignment of allotting these funds to worthwhile astronomy-related projects, under the regulations of the gaming commission, which essentially dictate that all expenditures have potential benefits to the general public within provincial borders.

Although participation in the project was fully open to all members, the bulk of the workload fell under the supervision of the council. This diverse group of eighteen active members fairly cross-represented the society's interests and objectives, and many hours were spent in council meetings and the various project sub-committees. The first project completed was the acquisition of a NeXT computer with full desk-top publishing and graphic capability. The computer has been dedicated to the publication of the centre newsletter, *Stardust*, and while our publication was already considered second to none, recent issues have been of a quality that must be the envy of organizations everywhere.

Under the watchful eye of treasurer Mel Rankin, the other project committees are finalizing their presentations for approval by the membership. Hardware acquisitions will include a high quality refractor to be housed at the public observatory of the Edmonton Space & Science Centre, eyepieces and other accessories for the observatory, a projector and accessories for special astronomy presentations, a new 18" mirror for the club telescope, and a set of entry level telescopes available for loan to members as well as to the public. Other expenditures will include a fund established for a perpetual R.A.S.C. award at the Edmonton Regional Science Fair, a subsidy for the 1993 Astronomy Workshop, a permanent display publicizing the R.A.S.C. and amateur astronomy in the Space & Science Centre, and a "rainy day" fund established to partially cover ongoing expenditures such as insurance of equipment, publication of *Stardust*, and speakers at future meetings. The Edmonton Centre also provided a large percentage of the volunteers for the Edmonton Space & Science Foundation's casino in March, which netted about \$30,000.

**Public Education:** The Edmonton Centre continues to be active in the area of public education, with this involvement to grow as the benefits of casino acquisitions become manifest. Our major platform continues to be the operation of the Public Observatory of the Edmonton Space & Science Centre. Although individual members have been involved on a volunteer basis since the opening of the E.S.S.C. in 1984, in 1991 the Edmonton Centre reached an agreement with the E.S.S.C. in which we would run the observatory on weekends year-round almost entirely on a volunteer basis. In 1992 the observing deck was opened on 184 occasions, with a total attendance of over 11 000 people from around the globe. Twenty-one R.A.S.C. members were involved, with over 1 000 volunteer hours being recorded. The entire operation was supervised by public education director Larry Wood, who spent many unrecorded hours on the telephone organizing shifts and also did work on site with nearly 200 hours of service.

The Edmonton Centre once again put on our annual star nights on the Astronomy Day weekend, which was organized by Sylvia Smith. Unfortunately, the weather was uncooperative, but on the Saturday night a couple of hundred people turned out to the observatory where a number of members had set up their private telescopes, and another fifty or so visited a second site established by members on the south side. A more successful evening occurred on June 14th, when about 350 visitors came to see the partial lunar eclipse under superb conditions. Another large crowd turned out on December 9th for the total lunar eclipse, which unfortunately was almost totally clouded out. The centre continued to put on special astronomy presentations upon request for groups such as Boy Scouts, Girl Guides, youth camps, etc. These were invariably well received, and occasionally prompted a donation to society coffers. Our other centrepiece event, the astronomy workshop, was not held in 1992. The three previous workshops were held in October, but our next event is planned for 1993 April at a new site.

**Meetings:** Our regular meetings continued to be well attended with anywhere from fifty to eighty persons usually present. In '92, meetings were moved from the classroom to the board room of the Edmonton Space & Science Centre, and were soon to be relocated to the Margaret Zeidler Star Theatre as a result of ongoing renovations at the science centre. As usual, feature presentations were about evenly divided between members and invited guests. In January, we were treated to a wide ranging talk by national council president Damien Lemay. February's meeting featured Martin Connors of the University of Alberta's physics department, who spoke about his ongoing analysis of the Magellan images of Venus. In March, Jennifer McKinley gave a presentation on her post graduate work at the Dominion Radio Astrophysical Observatory. Meteor observer extraordinaire Peter Brown headlined the April meeting. The next several meetings were devoted to members' nights, with keynote presentations given by Randy Pakan, Murray Paulson, and Alister Ling, and many other shorter talks and demonstrations provided by a number of members. Finally, in December, noted astrophotographer Rajiv Gupta of the Vancouver Centre shared some of his techniques and results with us.

Observing: 1992 was perhaps a subpar year for observing, with local weather conditions causing havoc on our regularly scheduled observing sessions, with about half of these being cancelled. Those that did proceed were well-attended, with upwards of thirty people at the observing site on occasion. Our group of "super hardcore observers" was not deterred by the adverse weather, and at least one or two of these diehards could be found at the observing site virtually anytime there was a moonless, cloud-free sky (and many times when there wasn't).

Observers group coordinator Paul Campbell did yeoman service, particularly in helping newcomers. Affectionately known as the "Scope Doctor", Paul often put aside his own ambitious observing schedule to help others with such rudimentary tasks as collimation and polar alignment, and assisted several members in building their telescopes. Notable among these was ShirLee Adamson's beautiful raspberry-coloured 12.5 inch f/5 Newtonian, which deservedly copped our club's telescope making award and was a popular display at the General Assembly. Sharon Tansey completed a homebuilt 8" f/6 Newtonian, while Murray Paulson extensively modified a 10" reflector he had purchased for a song, designing an innovative mount in the process. Tyler Foster built a 5-inch, f/3.8 rich-field reflector.

One successful event was our annual Perseid watch. Despite the presence of a nearly full Moon, over a dozen observers turned out for an all-nighter, according to Terence Dickinson, the best attended such event in Canada. Results tabulated by organizer Russ Sampson indicated almost 350 meteors were observed by the group, while Bruce McCurdy sent his personal log of over 140 meteors in five hours to the International Meteor Organization. All hands agreed that the shower was more intense than expected, with a sharp burst of activity before midnight causing particular surprise and excitement.

Less successful was an attempt to observe a grazing occultation of a star by the Moon in January. Thirteen people with nine telescopes got cold while standing in the wrong place. It turned out that the calculations of a culprit, who will remain nameless, were off by just enough to cause a spectacularly near miss. Veteran graze observer Franklin Loehde attested to seeing sparks coming off the Moon.

Mark Zalcik continued to conduct observations and research on the curious phenomenon known as noctilucent clouds. Alister Ling kept an eye on the sky for unusual atmospheric phenomena, and continued to develop his astrophotography skills. Russ Sampson carried on his ongoing project of monitoring sunrise and sunset times. Tyler Foster assisted in a research project to monitor variable stars using CCD photometry. A few members, notably Paul Campbell and Alister Ling, continued to audit selected objects from the NGC and other catalogues and notified the appropriate authorities of some errors they discovered. David Goldingay persevered with his daily project of monitoring and sketching sunspots, while Bruce McCurdy timed some lunar occultations. Several members, notably Randy Pakan, Murray Paulson, Russ Sampson, Dave Clyburn and Paul Campbell, continued to develop their sketching skills.

Special Events: An old tradition was revived when the centre held a banquet in celebration of its sixtieth anniversary. Murray Paulson organized the event, which attracted over fifty members and guests on the night of the vernal equinox. Murray Paulson was also instrumental in organizing the sixth annual Alberta Star Party at Kinbrook Island Provincial Park. With the Calgary Centre heavily involved in organizing the General Assembly, Murray picked up the slack and coordinated the event which was quite well attended but, again, was hampered by poor observing conditions.

The Edmonton Centre was well represented at the General Assembly with some eighteen persons in attendance. Doug Hube was elected first vice-president of the national council. Members ShirLee Adamson, Paul Campbell, Alister Ling and Sylvia Smith wowed the banquet crowd with their imaginative "Scope Doctor" presentation, easily winning the best song award. The award winning video was later displayed at an Edmonton Centre meeting to much hilarity.

Although not officially an R.A.S.C. event, our centre was very well represented at a lecture given by the noted cosmologist Stephen Hawking in May. The 2 700 seat Jubilee Auditorium was sold out weeks in advance as the curious thronged to see the man as well as hear the message. Dr. Hawking did not disappoint, with a remarkably concise lecture of the history, present state, and ultimate fate of the universe.

Awards: At the annual meeting in January 1993, Murray Paulson presented the President's Award for Service to Randy Pakan for his numerous contributions to the society, most of which are done behind the scenes with little recognition. David Goldingay was awarded the Observer of the Year Award, for his ongoing solar observing program which has seen him complete over 500 sketches in the last two years. As mentioned previously, ShirLee Adamson received the Angus Smith Award for Telescope Making. Paul Campbell presented the coveted Sagittarius Patch for dedicated observing to Daryl Teed. Paul also made an extraordinary presentation of the "Flatline Observer's Award" to Larry Wood. Original Edmonton Centre member Clinton Constant was honoured for his uninterrupted sixty year membership. Mr. Constant wrote us a lengthy letter of thanks from his home in the United States.

Club News: Edmonton Centre members continued to gain recognition outside the club. Russ Sampson continued to make regular contributions on local and national radio, and had an article and a sketch published in *Sky & Telescope*. Alister Ling made the jump from *Deep Sky* to *Deep Sky Journal* as the "small scope" columnist.

The Edmonton Centre continued to expand its library, with several new volumes donated during the year. A significant development was the software library, which benefitted from the computer expertise and organizing skills of Drew Paterson and Roger Fell.

In conclusion, 1992 was another enjoyable and rewarding year for the Edmonton Centre, with the members' serious pursuit of their hobby well seasoned with a healthy dose of fun and humour. With an active observing group, a hard-working council, and available cash for new projects, 1993 promises only bigger and better things.

**Bruce McCurdy, General Secretary**

1992 was a year filled with lots of the usual types of activities that have long been part of the Halifax Centre, but in addition there was also a great amount of work done by members in making preparations to host the 1993 General Assembly. In a way, the G.A. was responsible for a major shake-up in the executive as Mary Lou Whitehorne left the president's position, to take over as chairperson of the G.A. organizing committee. This left the president's position opened, which was filled by Pat Kelly who had been overheard saying that if no one else could be found by the time of elections, he would volunteer for the position. Later that year, the rest of the executive remembered his statement and held him to it!

# Halifax

With Pat leaving the helm of *NOVA NOTES*, a new editor was found in the person of David Lane. Due to a change in printing policies at the Nova Scotia Museum, which necessitated a new format for *NOVA NOTES*, a change of editor at this point also seemed appropriate. This also marked the first year in which the centre had to pay for printing, but we were fortunate in being able to avoid a surcharge. Dave has kept up a long tradition of editorial excellence.

The executive had several meetings that were held in places other than at the regular centre meetings, mostly due to time constraints at the meetings when we have had out-of-town speakers. (It has been traditional for most of the executive to have supper with the guest speaker, which leaves no time to actually get any work done!) One memorable executive meeting-cum-observing session was hosted by Dr. Roy Bishop. First we feasted on the superb optics in Roy's observatory and then we feasted some more (burp!) on Roy and Gertrude's wonderful cuisine. Ahh, the advantages of being on the executive!

We had the usual number of meetings as shown below.

January 17	<b>The Globular Clusters of M31</b> by Laurie Reed
February 21	<b>Auroræ and the Power System</b> by Joe Yurchesyn
March 20	<b>The Milky Way Midtown... Is There a Bar at the Galactic Center</b> by Dr. Doug Forbes, Sir Wilfred Grenville College
April 29	<b>Seeking the Holy Grail of Amateur Astronomy</b> by Terence Dickinson
May 22	Annual Banquet
June 19	Members' Night
September 18	G.A. Report, NOVA EAST Report, Stellafane Report
October 16	<b>The Case of the Missing Solar Neutrinos</b> by Terry Craig, Dalhousie University
November 20	<b>Gravitational Lenses</b> by Dr. Michael de Robertis, York University
December 11	<b>Using the Stars to Determine Geographic Longitude</b> by Nat Cohen; <b>CCD Photometry and Spectroscopy and the Burke-Gaffney Observatory</b> by David Lane

One of our more interesting talks was by Terence Dickinson who was in Halifax as a result of a joint effort by the Halifax Centre and the Discovery Centre to recognize the National Book Festival. We also used the occasion to host a public lecture as our main Astronomy Day activity.

Our annual banquet was organized this year by Nat Cohen. It was held at the Waverly Legion, and this year no one, including several members who are notorious for their gargantuan appetites, went away hungry. We also enjoyed a presentation by John Hault on the changing role of planetariums. John was heavily involved in the building of the Edmonton Space and Science Centre and is a member of the Nova Scotia Planetarium Advisory Committee. We also presented the Burke-Gaffney Award, which recognizes literary merit, to David Fleming, for an article he wrote for *NOVA NOTES* on Erathothenes. A new award, instituted this year to help pay for page charges and/or reprint fees for amateur centre members was awarded to Mary Lou Whitehorne for her paper in the society's *Journal*.

Over the summer three of our members made it to the Calgary G.A. and two returned with prizes. David Lane won the award for instrumentation for his Micro-Guider, while Pat Kelly brought home the award in the miscellaneous category for a display of astronomical stamps. Our members were also on a covert mission to spy out the Calgary Centre's preparations so that we could see what to do and what not to do. It is going to be a tough act to follow. (We will be assigning security personnel to monitor the movements of all St. John's members at the Halifax G.A.!)

The sixth Nova East was organized by Doug Pitcairn and held once again at Fundy National Park in New Brunswick. We instituted a \$10 registration fee this year to cover the costs of this year's door prizes and corn boil. There was money left over, as a result of a healthy sale of T-shirts, so next year we are planning on having even more prizes. We had a total of thirty-five registered astronomers, with a total attendance of about seventy-five when you add family and friends. This was the first time that we were completely clouded out, but at least the weather was mainly overcast, with little rain, so that we were able to make use of the days. We even had a small telescope to burn in effigy as an appeasement to the cloudy sky gods but it grew legs and walked away just as we were about to set it alight! Sigh! We did get to observe the Sun on one afternoon with white light and H-alpha filters. People even lined up to look through a Schmidt-Cassegrain instead of a refractor! O.K., Mary Lou had the H-alpha filter while the refractor did not! The abysmal weather did have a silver lining; namely a pie and ice cream party in one of the rented chalets. Actually it was a cook-off of sorts - home-made pie vs. ricotta cheese pancakes vs. Nova Scotia maple syrup vs. Vermont maple syrup. (Nova Scotia won, hands down!) The annual corn boil and weanie roast was another highlight, especially for the park racoons, who have yet to show any sign of being slowed down by "raccoon-proof" garbage cans!

Our Beaverbank observing site saw a lot of use throughout the year. One could find members there on any clear night that had no Moon. We also had two public star parties over the summer at Dollar Lake Provincial Park. These were part of their "Parks are for People" program and were both well attended by the park visitors.

Centre observers also had a few opportunities for doing some "serious" observing. On January 3rd, three members observed the Quadrantid meteor shower, in what has become a tradition of monitoring this meteor shower. Results were sent to the International Meteor Organization, and it would appear that some changes will be made to this shower as a result of these observations. Eight members, working in four pairs observed the February 10th lunar graze of Mu Arietis, with usable results sent to the International Occultation Timing Association. Our member at the Purple Mountain Observatory in China published a book called *The Ancient Study of Sunspots in China and its Modern Applications*, which contained a picture and description of our honorary president, Dr. Murray Cunningham, illustrating a method of observing the Sun by looking at its reflection in a pan of oil.

The centre has participated actively in the affairs of some of our "satellite clubs", namely the Nova Central Astronomy Club in Truro and the Cape Breton Astronomical Society's annual Highland Star Party held in the Highlands National Park, Cape Breton. (The weather wasn't much better there either, as they had three days and nights of rain, followed by one clear night!)

Closer to home, Halifax Centre volunteers continue to bring astronomy to the public through the small Halifax Planetarium. Several shows are done each week by volunteer members including all of the weekly public shows. The Nova Scotia Planetarium Advisory Committee (N.S.P.A.C.), which sprang from a subcommittee of the centre executive, spent the year raising funds and finding a consulting firm to do a feasibility study that would examine the possibility of a major new planetarium for the province. N.S.P.A.C. has been successful in procuring funding and the study is proceeding as this report goes to press.

With 1993 already under way, the Halifax Centre is looking forward to seeing many of you this summer.

**Patrick Kelly, President**

The Hamilton Centre has enjoyed an exciting and active year in 1992. President, Eric Golding, organized superb monthly general meetings for the membership to take pleasure in.

## Hamilton

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|-----------|---|
| January   | Arthur Oslach, a member from Simcoe, amazed the audience with slides and a commentary of the domed observatory at his home.   |
| February  | Dr. James Crockett gave an interesting talk on the geological aspects of the great catastrophies that have affected the Earth over its history.   |
| March     | Tony Quinn gave an inspiring talk on auroras. Windsor Centre member Joady Ulrich treated the membership to a visual and musical display of space art.   |
| April     | Ann and Bill Tekatch showed us the slides from their recent trip to Chile, including the observatories and their own astrophotos. The main speaker was Dr. Ray Carlberg of the University of Toronto who gave an interesting talk entitled "Too Many Galaxies".   |
| May       | Gary Woodcock advised the membership of the grazing occultations of 1992 and how to observe them. The main speaker was Dr. Christine Clement of the University of Toronto, who spoke about variable stars, in particular RR Lyrae variables.  |
| June      | John Gauvreau showed the audience his slides of a recent trip to Algonquin Park with Eric Golding and Garry Woodcock. North York Astronomical Association member Jerry Spivak gave a fine talk on supernova hunting. Dr. William Harris from McMaster University gave a talk on globular clusters in M31.   |
| September | Members' Night: John Gauvreau showed his slides from Starfest. Gary Woodcock followed with his slides of an electrical storm that occurred on August 10th, plus some slides from Stellafane. Ann Tekatch described how she and Bill hooked up an F.M. radio to observe the Perseid meteor shower aurally. Eric Golding showed us slides of recent astrophotography including the asteroid Vesta and some shots of Starfest. Doug Welsh explained the recent achievements of the C.O.B.E. satellite. |
| October   | Doug Welsh reported on Comet Swift-Tuttle. Garry Woodcock showed slides of historical lantern slides of the 1932 eclipse expedition. John Gauvreau and Bill Tekatch presented a talk on the history of cosmology and astronomy.   |
| November  | Doug Welsh displayed superb slides produced from the Magellan space probe. These slides were donated to the planetarium by Mike Jefferson. The main speaker was Professor Bob Garrison of the University of Toronto. He updated us on his research and current thinking on the exploration of the Milky Way halo. Particular emphasis was placed on spectrographic analysis of light from main sequence stars.  |
| December  | Grant Dixon showed a few slides of the Lowell Observatory. Dr. Nancy Evans from the Institute of Space and Terrestrial Science at York University advised us of her work on binary Cepheids.  |

These meetings and their excellent advertising may be the reason for increased membership this year. Thanks go out to Doug Welsh for advertising.



Extensive work was accomplished at our observatory in Flamborough by several busy members. Early in the year Grant Dixon wired one of the buildings at the site, complete with light switches and A.C. outlets. A few members gathered one afternoon and removed some trees from the site in order to clear a bit of the skyline. Barry Sherman spent a great deal of the summer months at the observatory repairing and improving the telescopes. With the aid of Stewart Attlessey, Barry installed a new drive on the Marsh 5-inch refractor. A great deal of public education was organized by Grant Dixon. Many classes were held at the observatory and at McMaster University Planetarium. Our centre is very proud of Grant and his assistants for their work with the public in 1992. Amateur telescope making was a main drive in 1992 as several members completed grinding their optics and assembling their telescopes. This would not have been possible without the expert counsel from Jim Winger, Barry Sherman and Bob Speck. *ORBIT* editor Ann Tekatch published excellent newsletters in 1992 with the help of splendid articles from the membership.

The observatory site was busy with numerous workshops and observing sessions, many organized by observing directors Ev Butterworth and Garry Woodcock. Activities ranged from Messier hunts to radio meteor watching, not to mention planetary observing, lunar eclipses, comets and much more.

Some new groups were established in 1992, including the observer's group and the cosmology group. The latter is headed by Bill Tekatch and meets four times a year on the nights of full Moons. It has had great success and remains intriguing.

Awards were given out at the October General Meeting. Certificates of recognition were given to Jim Winger and Bob Speck for their work in reinstating the A.T.M. group. Patricia Marsh and Ann Tekatch were each given a certificate for completing their first telescopes. Ann Tekatch and Bill Taketch both received their Messier Certificate from National Office for their recent accomplishments. The Gordon Craig Award was given to Alister Ling for his many contributions to *ORBIT*. The William A. Fautley Award for contributions toward the advancement of astronomy was given to Doug Welch. Grant Dixon was also thanked for his great contributions to the centre, including public education and especially for representing our centre magnificently.

Thanks go to all the members of the Hamilton Centre who made 1992 a very successful and satisfying year.

**Patricia Marsh, Secretary**

**A**nother year has come and gone in the Kingston Centre. It has been a year of many interesting meetings, speaker exchanges and a year of many rained out star nights.

The Kingston Centre was lucky to have John Myrtle from the Calgary Centre to talk to us about astrophotography and Dr. Kennedy from the Saskatoon Centre to talk to us about the

"Great Moon Hoax". Our very own president, Ian Levstein went on the speaker exchange program to the Calgary Centre in April.

Our centre had ten regular and executive meetings. The Kinston Centre has forty-three members; thirty-one regular members, four associate members and eight life members. All of our members have been treated to many excellent speakers from our membership, from archeoastronomy and lore to the wonder of astronomy programs on computers.

Many of our members from the Kingston Centre have had a wonderful year. Terry Hicks has become national treasurer for the next three years. The author of the *Beginner's Observer Guide*, Leo Enright, saw one of his dreams come true with the publication of his book. This is now available for everyone to enjoy. Also, our newsletter editor, Bill Broderick, had a letter published in the June issue of *Astronomy*.

To further the Kingston Centre's introduction to the public there was a mail display for Astronomy Day, May 9th, with a growing interest in the light pollution display as well. There was an observing session planned for that night but it was rained out. The centre also had a public star night for June's lunar eclipse; this too was clouded out. However, seconds before 75% totality the clouds moved and showed the beauty of our satellite. A public meeting night was held in July at our regular meeting. There was a good turnout of both young and old. Our centre was also represented at the annual G.A. in July by five members. Pictures and slides were brought back for all to enjoy.

The year 1992 has held a lot of enjoyment and pride for the Kingston Centre. I hope that for the future of astronomy and for our centre that we can bring to the public our combined knowledge and show them that the wonders of the universe are as close as looking up to the sky and seeing the nighttime jewels glistening brightly.

**Kim Hay, Secretary**

## Kingston

**T**he Kitchener-Waterloo Centre experienced a year full of activities in 1992. As most of the other centres in our region can attest,

1992 must have had more rain and cloud than any year in memory, but this did not deter our members from pursuing their hobby with enthusiasm. Our monthly meetings were full of a variety of topics and reports of observing done through breaks in the clouds were a testament to commitment.

## Kitchener-Waterloo

The January meeting was an opportunity for individuals to bring any pictures, slides or movies of what they had been looking at recently. John Rayburn had been taking videos of the planets with some excellent results and we saw some detailed images of the Moon. Jim Bracegirdle, who was in Costa Rica for the July solar eclipse of 1991, showed a video of that trip. In February, John Molson explained a fascinating project he had been working on. He is constructing a telescope which is both a 4.25-inch f/3 Newtonian and an f/17 Gregorian. Through the use of a removable Newtonian secondary, the light path can be directed into either system. It will be a very portable scope, useful in many applications. At our March meeting, Ray Koenig spoke on the big bang theory and the many indicators that support the theory. It is always an excellent subject for bringing out various views on the creation of the universe and the discussion is still going on.

In April we watched a video taken of our club twenty years ago and had a great time trying to match past faces with present. Many of our founding members, no longer with us, were remembered. John Rayburn also showed a video he had recently made at the observatory that will make interesting viewing in another twenty years. For the May meeting a guest speaker from the University of Waterloo, Dr. Pim Fitzgerald, spoke on the topic of missing mass. It is one of the hot topics in astronomy today as people are searching for dark mass in trying to determine how the universe will eventually end. It was an excellent talk and was enjoyed by those present. Through the spring the observing committee of John Rayburn and John Molson had a full schedule of observing nights planned. As well, the ongoing maintenance that has been carried out by many members of the observatory is appreciated by all.

During the week surrounding Astronomy Day on May 9th, the centre was involved in two public events. John Molson gave a talk to grade school students in Waterloo and that evening a public viewing session was held. The skies were clear and participants had a good look at Jupiter. That weekend a display was set up at a local mall, with telescopes on display and club flyers handed out. In the evening a scope was set up outside the entrance for passing shoppers to do some viewing.

In June, our last formal meeting before summer, Forbes Burkowski talked about life in the universe. He explored the likelihood of life existing elsewhere in the universe and the conditions that would make it possible. The club picnic, also held in June, was an indicator of the summer weather to come; cold, cloudy and looking like rain. For those who braved the elements we salute you. In August many members made the trek to Mt. Forest for the annual Starfest. The skies cleared when they had to, making it a successful weekend of viewing while the tent talks were fine as always. It must be noted that the group seemed to walk away with more door prizes than any other centre. Maybe we should start buying lottery tickets...

A return to our regular meetings in September saw Bernd Mueller give a talk on astrophotography. He explained the various equipment he has used and techniques that have been successful for him. Peter Daniel showed some of his slides, as he does at most meetings, reminding us of what can be done with a little effort and perseverance. In October Oscar Cole Arnal spoke on the viewing he has been doing. Oscar keeps a very detailed observing journal that describes his activities and contains his hand sketches of the objects he has viewed. It is fascinating to read his journal as he recreates his frustration but ultimate success at trying to capture faint objects.

At the November meeting the first of the new Mini Deep Sky Certificates was presented to John Rayburn. This could be an incentive for members to track down some of the targets that have eluded them. Ray Koenig gave the feature talk on lunar eclipses as December would contain a full lunar eclipse. He described what occurs during an eclipse as well as what roles lunar eclipses have played in history and folklore.

For the final meeting of the year, in December, it was decided to put off our year-end banquet until January when more members could attend. Jeff Collinson spoke on telescope making and showed the Newtonian he had built. He described how he ground and polished his own mirror and the excellent figure he obtained. He designed and built his own mount and showed his plans for a poncet attachment he hopes to build soon. His enthusiasm for telescope making is contagious and there are rumours some members are considering giving it a try.

In 1992 the renovation work on the club's 12.5-inch Newtonian continues. We are hoping this might be the year, but to tide us over, Bernd Mueller's purchase of a 14-inch Newtonian and its installation in the observatory, is giving members something to work with in the meantime. Some major repair work was done on the observatory opening and to those who helped make the repairs, the club thanks you.

Paul Bigalow continues to put out our newsletter, *Pulsar*, and welcomes the addition of John Juurinen as assistant editor. It is always full of interesting articles and useful information.

We look forward to 1993 for what it might bring and hope for clear skies.

**Jeff Brunton, Secretary**

1992 has been a very interesting and progressive year for the London Centre. Plans for a proposed observatory, begun over a year ago, are still being vigorously pursued. Members have been developing practical designs for the project and a diligent search is being made for a suitable location upon which to erect the observatory, clear of city lights, but also near enough to be reached without difficulty.

The centre has staged a few star nights for the general public and in early May we were invited to participate in an area Scoutmasters' conference at which we displayed a number of telescopes and fielded a host of enquiries about astronomy in general. During the year various centre members attended conferences and

The word "London" is written in a stylized, cursive font within a blue rectangular box with a white border.

star parties continent wide, including Starfest, the Southern Cross Astronomy Society in Miami, Stellafane, the Texas Star Party, Hidden Hollow and the River Place Campground in Mount Forest, Ontario. Our newsletter editor, Eric Clinton, represented us at the General Assembly in Calgary.

At our April meeting, the father of one of our members and an avid collector of antique telescopes and other astronomical paraphernalia, presented a fascinating demonstration featuring an orrery built in 1800 for Charles Boyle, Earl of Orrerey and later presented to the British Museum. It is a remarkable instrument, amazingly accurate, and a tribute to early 19th century skill.

Eric Clinton published eleven issues of *Astronomy London* during 1992. Every member receives a monthly edition of this well written journal. Martin Beech donated an 8-inch Schmidt-Cassegrain telescope to the London Centre. A very successful star night was held October 1st at the London Regional Children's Museum. Six centre members, with their scopes, were treated to one of those rare clear nights in 1992.

Altogether we were privileged to hear a number of interesting speakers on a variety of subjects throughout the year. The following is a list of speakers and their topics:

January	<b>Observing Globular Clusters</b> by Peter Jedicke
February	<b>The Southern Cross Society Winter Star Party</b> by Dr. David Toth
March	<b>Observing With Binoculars</b> by Randy Groundwater
April	<b>The Orrery</b> by John Chamberlain
May	<b>Light Pollution</b> by Dale Armstrong
	Annual Banquet <b>The Proposed London Space Academy</b> by John Winston and Dr. Murray Kucherawy
June	<b>Chaos</b> by Dr. Murray Kucherawy
July	<b>1992 General Assembly Report</b> by Eric Clinton
September	<b>Starfest Report</b> by Dale Armstrong
October	<b>The ST4 Startracker</b> by Dr. David Toth
November	<b>The Study of Globular Clusters</b> by Peter Jedicke
December	<b>The Life of William F. Denning</b> by Prof. Martin Beech, University of Western Ontario

**Grant Carscallen, Secretary**

Nos conférenciers du mois ont couvert des sujets très intéressants en 1992. En avril, le docteur René Doyon nous a entretenu de l'astronomie intergalactique en infrarouge; en juin, c'est le docteur

Anthony Moffat qui nous a parlé des résultats du premier projet québécois avec le Hubble Space Telescope de la N.A.S.A.

Nous avons ensuite fermé pour l'été, et eu un petit problème de conférencier en octobre, puisque celui qui devait venir (M. Bergeron) n'a pu venir pour cause d'hospitalisation...

Enfin, notre directeur des observations, M. Alain Roussel, nous a présenté chaque mois son rapport mensuel, nous entretenant de plus sur les filtres couleur, les étoiles variables, l'éclipse lunaire de 14 juin et les aurores. M. George Pichette a enfin instruit les débutants avec une série de cours d'initiation dans la première partie de l'année... Nous attendons les visiteurs à bras ouverts pour 1993, nos activités reprenant le 19 janvier.

Our guest speakers covered many interesting subjects in 1992. In April, Dr. René Doyon told us about intergalactic astronomy in the infrared; in June it was Dr. Anthony Moffat who told us about the results of the first Québec project with N.A.S.A.'s Hubble Space Telescope. Then we closed for the summer, and had a little problem with our speaker in October, since Dr. Bergeron was hospitalized just before his conference.

Last, but not least, our observation director, Mr. Alain Roussel, gave us his report each month, telling us about colour filters, variable stars, the June 14th lunar eclipse, and auroras. Mr. Georges Pichette instructed beginners with a series of initiation lessons in the first half of the year. We are waiting, open armed, for visitors in 1993, our activities beginning on January 19th.

**Pierre Paquette, secrétaire**

In many ways, 1992 was an outstanding year for the Montreal Centre. As always, our goal was to promote amateur astronomy as an exciting hobby that everyone can enjoy. To succeed, it was necessary to excel in several areas, notably advertising and public relations, membership recruitments, and services and programs just to name a few.

Throughout the year we met once a week at the I. K. Williamson Observatory, and thanks to the efforts of George Ashcroft, we presented a total of fourteen lectures to which the public

*C. F. de Montréal*

*Montréal*

*Centre Reports*

were invited. Of these, about half were given by astronomers from the Department of Physics at l'Université de Montréal. We owe them a debt of gratitude for their support. At one point in the year, attendance was so high that we had to move our meetings to the Dow Planetarium.

We hosted two open houses, which have become a tradition at the Montreal Centre, and we played a major role in the Astronomy Day exhibit at the planetarium. As well, we invited a special group of mentally challenged young adults to spend an afternoon observing the Sun with us. This proved to be a very rewarding and memorable occasion. Finally, the public was invited to our observatory to observe the lunar eclipse on December 9th. This event attracted about 200 individuals, and in total we welcomed over 2 500 people last year. As a result, our membership increased by about 20%.

In terms of services and programs, we continued to expand in a number of areas. Thanks to the generosity of Gary Angers, Bill Strople and many other members, three of the centre's telescopes were refurbished; our RAScope (Rent-A-Scope) program was revived and a 3-inch refractor was added to the selection of instruments. Meanwhile, our library, which is very popular among the members, acquired forty-five books and ten new videos. On the subject of videos, Mario Caluori and the video committee produced a number of very informative tapes and the centre's audio-visual equipment has added a new dimension to our meetings. The computer corner has continued to grow in popularity as well, largely due to the efforts of Khurram Syed who designed a user-friendly menu that allows easy access to programs such as Dance of the Planets, The Astronomical Almanac, SkyCurrent, E-Z-Cosmos and many more. Thanks to the generosity of Suzanne Moreau and others, the computer now has a numerical processor and additional memory.

The observer's group continues to meet once a month throughout 1992 and at present there are about forty-five members, many of whom are very avid observers. In fact, last year the Montreal Centre had a total of five Messier graduates. This beat our old record of two. The telescope making group was also revived thanks to the enthusiasm of Gaetan Cormier. This group has about twelve members, nine of whom are presently grinding mirrors. There were frequent outings to Mount Sutton and Ormstown, as well as a visit to the 1.6 metre observatory at Mont Mégantic.

Light pollution continued to be a growing problem for us and so we initiated steps to acquire an out-of-town observatory. A three member committee was set up to investigate potential sites and funding and an observatory fund was established late in the year. Thanks to the generosity of Doug Middleton, Ken Delamater, Khurram Syed, David Brown and others, that fund already stands at \$600. As members of the International Dark Sky Association, the Montreal Centre continued to advocate the preservation of the night sky. We contributed observations to the Pleiades Star Watch; we collaborated in the writing of various magazine and newspaper articles; and we continue to gather signatures petitioning the local, provincial and federal governments to consider legislation before it is too late.

Since we have to make due with our present observatory for a little while longer, we renovated the dome last year and expanded the observation platform. We also installed a control panel which will enable us to link our C-14 with the video equipment downstairs in the main room. Last year we suffered an unfortunate incident. In June, a thief broke into the centre and stole our C-8, a telescope which belonged to our late president, Bill Cadloff. This marked the fourth burglary in thirty years. We replaced the stolen equipment with an Ultima 8 P.E.C., and at the same time, we installed a high-tech security system and changed the locks on all the doors. The observatory should be a lot safer now.

Though there is much more to report, space is limited, so we conclude by saying that in retrospect, 1992 was a very eventful year for the Montreal Centre. We grew, we improved and we had lots of fun. After all, that is what amateur astronomy is all about. In 1993, the Montreal Centre will turn seventy-five years old and we fully expect the fun to continue.

**Louie Bernstein, President**

All meetings were held at the Niagara Falls Centennial Library, LaMarsh Room at 19h30 before the summer, at 19h00 after the summer break (and in the future as well).



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| January 23   | Annual Meeting. Reports from officers, election of new directors and planning for the future. Demonstration of astronomical software; some slides were shown by Ray Merrick; John van Ophem reminded us that 1992 is International Space Year |
| February 27  | <b>Deep Sky Observing Techniques</b> by Carl Milazzo  |
| March 26     | <b>The Voyager Missions</b> by Ernst Both   |
| April 23     | <b>The Quest for Dark Matter</b> by Dr. Jack Mack   |
| May 28       | <b>Space Life Sciences Aboard Spacelab</b> by Catherine Eimers  |
| June 25      | <b>Observing Globular Clusters</b> by Peter Jedicke   |
| September 24 | Member's Night; review of summer activities   |
| October 22   | <b>Basic Celestial Navigation</b> by Dr. John Black   |
| November 26  | <b>Memorable Occasions:</b> Members' most interesting experiences in astronomy; slides shown by Ron Gasbarini and others  |

Early in March, Charles Fassel, Ray Merrick and Catherine Eimers gave a day-long astronomy education class at Canadian Martyrs School in St. Catharines. On March 25th, Charles and Ray went to Prince of Wales School in Thorold to talk about the solar system. Ray went to Lady Spencer Churchill School on June 15th to talk about astronomy. The students there also visited the centre's observatory, which was manned by Ron Gasbarini, in two groups.

On April 25th, the centre organized a trip to the McLaughlin Planetarium and the D.D.O. which was a success. July 1st marked the dedication of the observatory to the memory of Al Kindy, past president of the centre, with a barbeque, slide show, fireworks and observing after dark. Brock Telescope Night in late September saw nine members with telescopes assisting Dr. Black and his astronomy class of about 300 for a few hours of observing. Of the many planned members' observing nights, six were reasonably successful with fair to clear conditions. For the rest of us, we all know what kind of summer we had!

**Walter Jutting, Secretary**

**T**he Ottawa Centre membership for 1992 was 243 members, consisting of 171 regular, thirty-one senior, eight junior and thirty-three life members. This number shows a slight decline over 1991 membership by fourteen people.

Members were treated to a wide variety of topics at this year's centre meetings, organized by Robert Dick. The year began in October with a talk by Steve Dodson from Science North in Sudbury about "Adventures of a Stargazer in Northern Ontario".

He spoke about a variety of observing and instrument making projects in Northern Ontario.

The annual dinner meeting, held on November 15th, 1991, featured a talk by Peter Jedicke entitled "Observing the Globular Clusters". It was an inspiring talk, inviting us to become observers of globular clusters of varying degrees of difficulty.

The January talk was given by Peter MacKinnon. He spoke on "Astronomical and Geological Impact on Climate Change". The talk examined both long and short-term impacts on the Earth's climate caused by variations in solar output, Sun-Earth interactions and geophysical changes.

The next talk, in February, was given by Robert Warren and Patrick Naraine of the Canadian Space Agency who spoke about "Radarsat: Canada's Remote Sensing Satellite". The talk included a discussion of the history of Canada's remote sensing from space, a detailed discussion of the Radarsat mission, the spacecraft itself and plans for future missions.

We broke with tradition in March and had our own centre members talk on astronomical imaging. The advantages and disadvantages of different imaging techniques was discussed. Our April speaker was Ken Hewitt-White talking about astronomy in the Okanagan Valley and his plans for developing a public observatory and astronomy resource centre near Penticton, B.C.

The May speaker was Alan Hildebrand, one of the discoverers of an enormous crater remnant off the Yucatan peninsula. This crater has been identified as possibly being the remnant of a devastating meteor impact which may have caused the mass extinction of dinosaurs and other species of the Earth approximately 63 million years ago. His talk was entitled "The Cretaceous-Tertiary Boundary Event". The talk focused on impact craters, their ejecta and resulting geology. He also discussed how the crater was found and possible extinction mechanisms of ancient life forms.

In September Louis Noreau talked on the James Clerk Maxwell Telescope in Hawaii, a revolutionary new telescope operating in the little-explored sub-millimetre waveband. During his talk, entitled "JCMT: A New Window on the Universe", Mr. Noreau discussed the history, site, enclosure, telescope, receiver, data analysis and the type of science done with the JCMT.

The Ottawa Centre's Observer of the Year Award was presented to Paul Boltwood at the February observer's group meeting. At the same meeting Rob McCallum was named the winner of the Variable Star Award. The monthly meetings of the observer's group were also well attended and focused on topics of general interest to all observers.

The number of visits to the Indian River Observatory up to the end of October was only 121 compared with 232 last year and 306 in 1990. Visitors this year included groups from Carleton Place and the Carleton Board of Education. The observatory was also the site for the Messier Marathon early in the year.

A number of work parties were held at the observatory during the summer to upgrade the 16-inch telescope and to maintain the property, which is leased from the Mississippi Valley Conservation Authority. A significant improvement in observing with the 16" resulted from the installation of an NCC-MAX digital setting circle computer at the end of July. This equipment, donated by one of our members, makes the telescope much easier to use than before since it helps locate objects from a very large database within seconds. The telescope was also recollimated with the result that images are substantially better.

The Stan Mott library was fully operational during 1992 thanks to RoseAnne and Gary Mussar and some new books were purchased. As always, *Astronotes* featured many fine and interesting articles under the editorship of Doug George.

In November 1991 we obtained the sponsorship of Dr. Watson of Carleton University and formalized our relationship with the university. We are most thankful to Professor Peter Watson and the physics department at Carleton University for providing us with rooms for our council, observer's group and centre meetings.

Council met on December 13th, 1991; February 21st, 1992; May 8, 1992 and September 25th, 1992. At the December meeting of the council, the following committees were appointed under the supervision of Robert Dick (first vice-president): program, dinner meeting, special activities, national council representatives, light pollution, *Astronotes* editorial advisory board, awards, nominations and constitution, membership and the observer's group. Committees supervised by Richard Wagner (second vice-president) were library, observatory and accomodation.

**Jane Lund, Secretary**



**O**n peut dire que 1992 fut une année fort occupée. Cinquantième anniversaire: Comme notre club fut fondé en 1942, l'année écoulée fut l'occasion de souligner notre cinquantième anniversaire. C'est ainsi que nous avons tenu, le 15 août dernier, une soirée grand public sur les "Plaines d'Abraham". Près de deux cents personnes sont venues nous visiter au pied de la "Tour Martello". C'est à cet endroit que les fondateurs de notre club avaient érigé, il y a un demi-siècle, leur premier observatoire. Le 19 décembre les activités du cinquantième se sont clôturées avec soirée "Travaux des membres" et le traditionnel buffet.

# Québec

Activités: Parmi les services offerts notons notre ligne téléphonique où vous pouvez accéder à notre répondeur au 416-660-2815 et en profiter pour être mis au courant de nos activités et nous laisser vos messages, le journal "La Chouette" grâce au travail acharné de Jonny Gauvin, les soirées d'observations à l'observatoire du Collège de Lévis à Saint-Nérée (Schmidt-Cassegrain de 14" et caméra Schmidt de 8"), les "Soirées du premier quartier", les débuts forts prometteurs de la télématique et "Loto-Solstice".

Un ambitieux projet de cloche à vide pour l'aluminisation des miroirs de télescopes est né de l'achat d'une pompe à diffusion. Les travaux sont en cours et nous vous tiendrons au courant des prochains développements.

Afin de rajeunir notre bibliothèque il fut décidé de vendre à l'encan, lors de nos réunions mensuelles, les livres qui n'ont pas bien supporté le passage du temps. Mais loin de nous l'idée de voir se dilapider l'héritage légué par nos prédécesseurs.

Je voudrais aussi souligner les réalisations de certains de nos membres dont l'observatoire de Michel Saint-Laurent à Saint-Luc, les cours d'astronomie donnés par Guy Campeau au Service des loisirs de Beauport, le journal l'Azur publié par Dominique Beauchamp, les émissions de vulgarisation présentées à la radio par Dan Côté et les autres dont le peu d'espace m'empêche de nommer.

Eclipse: Lors de l'éclipse du 9 décembre dernier Stéphane Potvin, Denis Martel et Guy Campeau ont aidé une cinquantaine de participants au Domaine Maizeret à mieux apprécier ce splendide spectacle.

C'est enfin avec fierté que notre club a vu l'un de ses membres les plus dévoués, Jean-Marie Fréchette, se voir remettre par le président national sortant, Damien Lemay, une médaille soulignant le travail de cet infatigable artisan voué à la cause de l'astronomie.

Nous vous invitons à nous communiquer.

Conférences mensuelles en 1992:

- 8 janvier **Le programme spatial canadien** par Gilles Leclerc
- 5 février **l'almanach graphique** par Patrick Dufour
- 4 mars **Projet Gemini** par Dominique Beauchamp
- 1 avril **Structure des galaxies spirales** par Sonja Delisle
- 6 mai **Pulsars et étoiles variables** par Réal Manseau
- 3 juin **L'ancien et le nouveau système solaire** par Guy Campeau
- 9 septembre **La spectrographie d'étoiles** par Luc Bellavance
- 7 octobre **L'observation des satellites artificiels** par Louis Carrier
- 4 novembre **Collisions chez les galaxies** par Pierre Martin
- Films sur des éclipses de soleil** par Edward Bullman
- 2 décembre **Evolution de l'astronomie d'amateur d'ici l'an 2000** par Damien Lemay

**Louis Carrier, secrétaire**

**T**he latest report on the St. John's Centre membership was that the centre had thirty-four members, with four life members. In a note from National Office, it was stated that 16% of our members were youth members. Two members live outside St. John's, one in the city of Corner Brook, the other in the town of Pasadena.

# St. John's

There were ten monthly meetings held in the physics building on the Memorial University campus. Attendance at these monthly meetings was around eighteen to twenty-four members. Speakers were fewer this year, and a special night featuring astronomical computer software was held.

The format of these meetings, after consultation with the membership, was changed, with the business portion being shifted to the end of the meeting so that members not wishing to sit through this portion of the meeting could leave. There were three executive meetings this year.

Eight observing sessions were held at the centre's observing site in Butterpot Provincial Park, a half-hour drive from St. John's and it is reported that one member has come close to obtaining the Messier Certificate.

The centre held or took part in a number of events this year. First among them was Astronomy Day, held in the Village Mall, and it was well attended. This year's exhibit was supported by an excellent photographic display, organized by members Brian

Payton, and the day was deemed quite successful. Unfortunately, the centre's annual "Star-B-Q", held in Terra Nova National Park, was the victim of poor weather, but excellent cooperation from the park's staff helped to make up for this when the speakers gave their talks. The centre was asked to participate in Memorial University's annual science fair. We thank those members who showed up to help answer questions from the public.

Two editions of the centre's newsletter, *All About Stars*, were published this year with the help of editor John Bell.

Centre equipment received necessary improvements with the purchase of two eyepieces and a focuser for the 12.5-inch Russell Telescope, as well as the storage box to house it out at Butterpot Park.

Many thanks go out to generous centre members who readily pitched in when Astronomy Day, the science fair and observing sessions took place as well as the continual mandate of teaching children.

**Charles Henderson, Secretary**

**T**he Saskatoon Centre held regular meetings on the third Monday of the month. A total of ten executive meetings and ten general meetings. There was no meeting held in July. Presentations and lectures were as follows:

## Saskatoon

January 8	<b>Astronomy: A Hobby and a Science</b> by Damien Lemay
February 17	<b>The Moon Hoax</b> by Professor Emeritus J.E. Kennedy
March 16	<b>History of the Ottawa Centre</b> by Sandra Ferguson
April 6	<b>Large Scale Meteorite Impact and Its Consequence</b> by Dr. Richard Grieve
May 11	<b>Astronomical Sites in the U.S.</b> by Al Walker and Al Hartridge
June 15	<b>Science in S.P.A.C.E.</b> by Ingrid Benning
September 21	<b>The Mount Kobau Experience</b> by Al Hartridge, Scott Alexander and Jim Young
October 19	<b>Centre Activities</b> by Professor Ed Kennedy, Sandy Ferguson, Gordon Sarty and Richard Huziak
November 16	<b>Around the World in 80 Slides</b> by Richard Huziak
December 26	<b>Thar She Blows! Solar Eruptions and the Northern Lights</b> by Dr. G. Sofko

The year started out with a visit and a presentation by the national president of the R.A.S.C., Damien Lemay. This was part of a five centre tour by Mr. Lemay. Astronomy Day activities were set for May 9th with a mall display and public star night. The mall display was well received by the public, however the star night was rained and snowed out. The Saskatoon Centre held its annual public star night on July 24/25th. The first night's viewing was fair with a moderate public turnout, however the second night was much better with good viewing and a large turnout by the public.

**I**n January we hosted national president, Damien Lemay, on the 11th. We had a fine turnout with twenty-six members and their spouses attending a dinner meeting, which was followed by a slide show and talk.

During March, a presentation was made by Bob Bishop to the grade five and six students at Riverdale Public School. This was followed by an evening observing session by Jim Zeleny and Ted Bronson. Some of the questions asked: "Can you see the Russian space station?", "What effect does a black hole have on meteors?" and "What is a noctilucent cloud?" This month we also started our telescope loan program to members who have no equipment.

In May we started our "Phone a Fellow Astronomer" program, to spread the news when someone was going observing. We also spent an evening under the stars with the Thunder Bay Field Naturalists.

The turnout for the June partial lunar eclipse was great even though it included hoards of mosquitos and black flies! We also experimented using a camcorder through a 17.5-inch scope, which was a trial and error event, but the results were worth it.

During July and August we held two events at provincial parks. A large number of campers showed up for both events which were conducted by Ted Bronson. Jim and Elaine Zeleny and Bev and Bob Bishop attended the Calgary G.A. and had lots to report.

In November we had a show and tell program which brought forth many surprises and gales of laughter from the members.

Bob Bishop made a December visit to Oliver Road Public School and answered more of those great in-depth questions from the students.

## Thunder Bay

The past year has seen a remarkable growth in the number of organized activities in which members of the Toronto Centre could participate. A quick glance at the "What's On" pages of *Scope* shows that in the last twelve months there were very few weeks when there was not at least one event organized by the public education or observational activities committees outside of our usual schedule of lecture meetings and members' nights.

# Toronto

Public education continues to be the Toronto Centre's most visible public activity. The 1992 Astronomy Week programme was presented from May 2nd to 9th in cooperation with the McLaughlin Planetarium, the Ontario Science Centre, the Department of Astronomy of the University of Toronto, the Petrie Observatory of York University and the Deep Sky Observers Club. About eighty volunteers and staff members participated in bringing astronomy to the public. Although we enjoyed much drier and clearer weather during the week than in 1991, the kick-off event at the O.S.C. on May 2nd was drenched by a spectacular lightning storm. Fortunately, the many indoor activities planned for the day ensured its success.

Three shopping mall displays were organized during the winter and early spring by Bob Taylor. Summer public star nights were held simultaneously at Morningside Park and Humber Bay Park West on the evenings of July 6th and August 4th. Members of the centre continued our tradition of participating in the Saturday night public viewing programmes from April 11th to October 3rd and assisted with the Ontario Science Centre's event at Bruce's Mill Conservation Area on August 21st. Between October 1991 and the end of September 1992, many members presented group talks and telescope displays to seventeen groups which included Girl Guides, Wolf Cubs, Boy Scouts, school groups and other organizations. We thank committee chairman John Gindner, his events coordinators Bob Chapman, Steven Spinney and Bob Taylor, and the many centre members who participated in these activities for their superb efforts to bring astronomy to the public.

Dr. John Percy organized a very interesting series of lecture meetings which touched on many different aspects of astronomy and related sciences.

October 18th	<b>Surveying by Satellite</b> by Prof. Attallah Wassef
November 29th	<b>Vision in Astronomy</b> by Prof. Peter Hallett
January 31st	<b>Understanding Hawking's A Brief History of Time</b> by Dr. Rebecca Fahrig
February 28th	<b>Stellar Pulsation Visualized</b> by Dr. Dimitar Sasselov
March 27th	<b>Stellar Spectroscopy Today</b> by Prof. John Lester
April 24th	<b>Astronomy In Mexico</b> by Dr. Julieta Fierro
May 22th	<b>Big Galaxies in the Early Universe</b> by Prof. Stephen Eales
June 19th	<b>The "Discovery" of Black Holes</b> by Prof. Tom Bolton
September 25th	<b>What is the R.A.S.C.?</b> by Mr. Peter Broughton

A joint meeting with the Royal Canadian Institute was held on November 24th, 1991. Dr. Simon Lilly spoke on "Long Ago and Far Away: The Origins of Galaxies".

The observational activities committee under chairman Guy Nason organized twelve members nights during the year. A total of twenty-eight individuals gave sixty-four presentations on a variety of subjects. These included the solar eclipses of July 11th, 1991, June 30th, 1992 and May 10th, 1994, the lunar eclipses of June 14th and December 9th, 1992, seven astronomical conventions in Canada, the U.S. and Mexico, variable stars, lunar occultations, the 1992 Messier Marathon, astrovideo, auroræ and calculating stellar distances. A special public members' night was held at the Ontario Science Centre during Astronomy Week to discuss light pollution. Joady Ulrich and David Lazerick of the Windsor Centre presented a talk on "Astronomy on Canvas" as part of our speaker exchange with the Windsor Centre. The June members' night was followed by our first garage sale which raised \$600 for centre activities. We thank Mary Anne Harrington and Bill Gardner for organizing refreshments for the lecture and members' night meetings throughout the year.

Ten observing workshops were organized by Bob Chapman in Scarborough, while Bill Gardner organized nine in Etobicoke. Bob Chapman also arranged nine deep sky observing workshops at Camp Robin Hood during the year. These events have been very well attended. Guy Nason organized two expeditions to observe grazing lunar occultations during the summer. The data gathered from these events has been sent to the International Occultation Timing Association and the International Lunar Occultation Committee.

The annual open house at David Dunlap Observatory was held on September 12th, 1992. We thank Dr. Ernest Seaquist, director of the observatory, Dr. Tom Bolton, the assistant director, and the staff and students for their hospitality.

Membership on September 30th, 1992 included 639 regular, ninety-six senior, thirty-three youth and eighty-seven life members for a total of 855. There were sixty-three associate members. Compared to last year, membership decreased by 7%.

Each year there is a large turnover in the membership of the centre. Your council has noted that many members have been with the Toronto Centre for less than five years. In the last two years there has been an overall decrease in membership as well as a decrease in meeting attendance. An ad hoc committee chaired by Elizabeth Doucette has been contacting past and present members to learn if our present activities are addressing members' needs and expectations. Preliminary results indicate that some members have been adversely affected by the recession, while others have lost interest. Other members have moved out



of the area and chosen not to continue their membership. A few became disenchanted because after being members for several years they still did not own a telescope. The new ideas committee is continuing its work and hopes to present proposals which will encourage members to participate more in centre activities.

The Toronto Centre gratefully acknowledges the donation of telescope parts by Mr. Kurt Frenkel, a telescope from Mr. Rolf Gaida and the donation of an orrery by Mrs. Marion Draper of Montreal. The orrery was built by Mrs. Draper's late father. It is hoped that the orrery will eventually be put on display. Robert May, chairman of the archives and property committee, has made slow but steady progress in cataloguing the centre's equipment. A list of the equipment entered in the inventory is now available.

In 1993, the Toronto Centre will observe the 125th anniversary of the founding of the Toronto Astronomical Club. Otmar Eigler is continuing to work on the archival binder project, which is a photographic history of the centre.

Mary Anne Harrington and Paul Fjeld completed a term of three years as the editorial team for *Scope*. The centre's newsletter is the only contact we have with many members who are unable to attend centre meetings. Mary Anne and Paul have spent many hours producing an attractive, informative and entertaining publication and they deserve our thanks for their efforts.

The pages of *Scope* contained a series of articles and letters to the editor about the *Journal of the R.A.S.C.* This was but one aspect of the finances and operations of the national organization that attracted the attention of both the council and members of the centre in early 1992. The Toronto Centre's delegates to National Council have contributed greatly to the discussions aimed at resolving these issues.

The annual picnic was held at High Park on Saturday, June 19th. About twenty-five members and friends of the Toronto Centre enjoyed the games, sports and food during the afternoon and evening. This event was organized by Tony Horvatin, Elizabeth Doucette and Otmar Eigler. The Toronto Centre is grateful to Ault Foods Ltd. for its donation of milk products.

The optical workshop resumed operations during the winter under the direction of Bill Gardner. The group meets each Saturday and is currently grinding eight mirrors.

The 8th Annual Awards Banquet was held at the Marriott Eaton Centre Hotel on April 4th. The hosts for the evening were Guy Nason and Ian McGregor. Our guest speaker was Terence Dickinson, a long-time member of the centre, who spoke on "The Lure of Backyard Astronomy". He illustrated his talk with many superb astrophotos. President Steven Spinney presented the Bert Winnearls Award for Service to Dr. B. Ralph Chou. Door prizes were supplied by the McLaughlin Planetarium, The Canadian Space Agency and Firefly Publishers. We thank Mary Anne Harrington for organizing this very enjoyable evening.

We congratulate the following members who were in the news in 1992. This spring, Terence Dickinson received the 1992 Sanford Fleming Medal of the Royal Canadian Institute in recognition of his contributions to the public understanding of astronomy. At a dedication ceremony at the David Dunlap Observatory in June, the University of Toronto's 61 cm telescope in Chile was named the Helen Sawyer Hogg Telescope in honour of Dr. Hogg's sixty years of service to Canadian astronomy. Dr. John Percy was appointed as vice-chairman of the board of the Ontario Science Centre.

On behalf of the Toronto Centre, I thank all those members who contributed to the success of the activities reported here. I also acknowledge the valuable services of Michael Daly, Elizabeth Doucette, Otmar Eigler, Paul Fjeld and Paul Markov who are stepping down from Council. The participation of these many volunteers is a priceless asset to the Toronto Centre and we are grateful for their help. Finally, I record our thanks to the staff of the McLaughlin Planetarium for their continued hospitality.

**B. Ralph Chou, Secretary**

**T**his has been a very busy year with twelve regular meetings and several more than the usual twelve for extra council business.

We have continued to have outstanding speakers, provided by our reliable speaker coordinator, Barry Shanko. Our annual dinner was held in March with Dr. John Macdonald, our honorary president, speaking on the history of Canada in space. We have also had successful members' nights, and in November our first members' party.

Special events included Astronomy Day on May 9th, the Fraser River Festival in June and, for the first time, sidewalk astronomy in the west end, initiated by Rajiv Gupta. Observing weekends were held at Manning Park (East Gate) and many attended Mount Kobau. Another first was an astronomy booth at the Coquitlam Centre Mall on March 25th-26th, initiated by Frank Marino. T-shirts and bumper stickers, designed by Frank, have been profitable items of merchandise. We made a field trip to the D.A.O. on March 21st.

It is sad to have to record the sudden death of valued member Dale McNabb on February 15th. Our telescope site at Aldergrove Lake Park was then dedicated as the Dale McNabb Observatory.

For 1992 we had our own calendar, thanks to Raj and his excellent photography.

Speakers during 1992:

January	<b>Ancient Ingenuities</b> by Dr. J.L. Berggren, Simon Fraser University
February	<b>Building Software for the Space Station</b> by Rick Jeffrey, MacDonald Detweiler and Associates
March	Planetarium Show
April	<b>The Hubble Space Telescope</b> by Dr. Crabtree, D.A.O.
May	<b>Soviet Inner Solar System Explained</b> by Hugh Gregory

## Vancouver

June	<b>Northwest Native Indian Archeoastronomy</b> by Dr. David Vogt, U.B.C.
July	Videos presented by David Dodge
August	Members' Night
September	<b>COBE and the Big Bang</b> by Mark Halpren
October	Members' Night
November	<b>Neutrino Stars</b> by Dr. Philip Stamp, U.B.C.
December	<b>Raven's Christmas</b> by Dr. David Vogt; Annual meeting

**Sally Baker, Secretary**

**E**lection of a new slate of officers ushered in a number of changes for the centre, including a new format for the monthly *Skynews* newsletter by editor Betty Hesser and her assistant Mae Shearman, and the establishment of electronic mail by vice-president Gary Sherman.

At the same time, a move by the observer's group to Jack Newton's new home on top of Matheson Mountain near Victoria, gave the members an opportunity to use his 25-inch Newtonian telescope and the observatory he built into his house. By looking over Jack's shoulder we have delved into CCD computer imaging in colour, which has sparked a growing interest by a few members to get involved in it themselves.

The centre participates every year in Victoria's four day long annual hobby show, held in April, where we staff a booth crammed with telescopes and visual aids for the public's enlightenment. Members spell each other off in shifts answering questions and giving out leaflets.

Jack Braniff, who organizes our education group, has arranged star parties and in-school lectures during the year, besides reaching out to Brownies, Cubs and other junior organizations, with considerable success. Because of its proximity to the Dominion Astrophysical Observatory and the University of Victoria, the centre has benefitted from a goodly number of professional members of the centre, and also visitors to the D.A.O. from the U.S. and overseas, all of whom have shared with us some of the latest information and developments in the field of astronomy, as the following list shows:

October 1991	<b>The Truth About the Great Attractor</b> by Dr. N. Visanathan
November	<b>Designing and Building the Keck Telescope</b> by Dr. J. B. (Bev) Oke
December	<b>Solid State Detectors for Astronomy</b> by Dr. Rick Murowinsky
January 1992	<b>N.A.S.A. Select T.V. Programs</b> by Frank Oganoski
February	<b>Columbus' Voyage and Astronomy</b> by Dr. Alan Batten
March	<b>BL Lac Objects: Naked Quasars or Gravitational Lenses?</b> by Dr. Roberto Abraham
April	<b>Members' Night</b> by Jack Newton and Gareth Shearman, demonstrating CCD imaging and electronic networking
May	<b>Distant Galaxies Through the Eyes of C.F.H.T. and HRCam</b> by Dr. Robert McClure
June	<b>What's New with Black Holes</b> by Dr. Anne Crowley
September	<b>N.A.S.A. Select Program: The Mars Probe</b> by Frank Oganoski

For the first time, we held a picnic during the summer break. It was well attended and we are hoping to make it a regular feature on our calendar of activities.

Membership is holding steady at 125, but there is a dearth of younger members, and has been for some time. I have wondered whether a junior organization, affiliated to the R.A.S.C., and offering activities more in keeping with their age and needs might be the answer.

**Bill Almond, Secretary**

**1**992 for the Windsor Centre was positive despite economic challenges. This was Dan Taylor's second year as centre president. Tim Bennett obtained his Messier Certificate. We had a very successful and professional-looking display at the Devonshire Mall for Astronomy day, on May 9th.

Dave Marchand attended the Winter Star Party in the Florida Keys in January. Dan Taylor and a few other Windsor Centre members travelled to the Texas Star Party. Some members also attended the Stellafane, Starfest and Hidden Hollow conventions. Tim Bennett obtained awards at the Hidden Hollow convention for astrophotography and his clock drive.

We also had another successful speaker exchange with the Hamilton Centre which was concluded in June. The centre is currently building up a fund to purchase a slide projector in the very near future. Serious preparation is being made for a bid to

# Victoria

# Windsor

host the society's 1995 General Assembly. Starting in December, Randy Groundwater and Bert Huneault began to write a column on astronomy which appears in the *Windsor Star* on the first Saturday of each month.

Successful efforts to observe the globular star cluster Omega Centauri from mainland Canada during this year and in 1989 were acknowledged by *Sky & Telescope* in their "Observer's Notes" column in the December issue. Dan Taylor and Al Des Rosiers had viewed the cluster with a 50 cm reflector last April. Dan and Randy Groundwater had observed this object with a 32 cm reflector in 1989.

Sincere appreciation is expressed to all persons who have readily participated as speakers or in other activities in the centre. We had three council meetings during the year and one social in December. Membership meetings were as follows:

January 21	<b>The Magic of Binoculars</b> by Randy Groundwater
February 18	<b>The Annular Eclipse of the Sun, January 4th, 1992</b> by Frank J. Shepley
March 17	<b>The Adventures of a Northern Ontario Amateur Astronomer</b> by Steve Dodson, Science North, Sudbury
April 21	<b>Astronomy on Canvas – A Second View</b> by C. Joady Ulrich
May 19	<b>Cataclysmic Variables</b> by Steve Pellarin
June 16	<b>Observing Perseus</b> by Grant Dixon, Hamilton Centre
September 15	<b>Have Telescope, Will Travel</b> by Dan Taylor
October 20	<b>The Telescope – From Galileo to Hubble</b> by Dr. Mardechay Schlesinger
November 17	<b>The Milky Way</b> by Marty Kunz, Past President, Warren Astronomical Society

**C. Joady Ulrich, Secretary**

The year 1992 was a busy and productive one for our centre. Members participated in varied activities such as public star nights at the Fort Wayne Nature Centre, star parties, and specific events such as the Perseid watch and asteroid occultation expeditions. Still others pursued their interests in telescope making, reporting sky events to the media, teaching undergraduate introductory classes for novice astronomers and CCD imaging. Chris Rutkowski was featured on a T.V. program, "Unsolved Mysteries", where he spoke about a well-known U.F.O. encounter which allegedly occurred in Manitoba some years ago.

Our Astronomy Day activities were once again held at the Forks Open Market. Centre members set up a display of books, photographs and telescopes. A computer was used to demonstrate "The Dance of the Planets" software. The display drew lots of visitors, along with the solar observing activity held just outside the market.

This year has proved to be a major disappointment for our keen observers. Normally we can boast of excellent skies for carrying on observations here in the heart of the continent. This year has been the exception, with cloudy conditions and snowfall to the end of the month of April. A cool, wet summer permitted precious few occasions in which to observe. An all too brief, but glorious Indian Summer gave some centre members the chance to follow Comet Swift-Tuttle's peregrination through the autumnal sky. Alas, such good fortune came to a sudden halt when the first snows arrived at the beginning of November, accompanied by cold weather and gusty conditions. Centre members have been forced to curtail outdoor astronomy activities and learning to make do by such vicarious means as reading and running astronomy programs on their computers.

Our general meetings were held on the second Friday of each month at St. Paul's College on the campus of the University of Manitoba. These meetings were well attended. The topics and speakers were as follows:

January	<b>Amateur Astronomy: A Hobby and a Science</b> by Damien Lemay
February	<b>Computers in Astronomy</b> by Jay Anderson and Scott Young
March	<b>The Inflationary Theory of the Universe</b> by Dr. Martin Clutton-Brock
April	<b>General Astronomy Night</b> by Chris Brown and Stan Runge
May	<b>The Evolution of Life: Answers from Astronomy?</b> by Dr. Glen Klassen
June	Annual Barbeque and Great Messier Race – yes, it was cloudy!
September	<b>Riding on a Comet</b> slide presentation by Jeff Harland
October	<b>Search for Extra-Terrestrial Intelligence</b> by Chris Rutkowski
November	<b>Testing for Optical Quality</b> by Bill Krosney
December	Christmas Get-together

After most meetings, the members stayed for a coffee and doughnuts and also to chat and exchange stories and information. The spirit of friendship and camaraderie which prevailed made visitors and novice members feel welcome.

In closing, 1992 has been challenging but successful and we are all looking forward to clear skies in the new year.

**Gilbert Raineault, Secretary**



The 1992 Annual Meeting of The Royal Astronomical Society of Canada was held on Sunday, July 5, 1992 in Room PEB132, "B" Block, Physical Education Expansion, University of Calgary, Calgary, Alberta, with the President, Mr. Damien Lemay presiding. The meeting was called to order at 9:05 a.m.

Mr. Lemay welcomed members to the 1992 Annual Meeting of the Society. He also thanked the Calgary Centre for hosting such a well organized General Assembly and stated that everyone was enjoying the many activities which had been planned over the weekend. Mr. Lemay then asked the members of each Centre to stand and be acknowledged as he called out the list of Centre names. Members were present from eighteen of the twenty-two centres. Several unattached members were also present.

### 1. APPROVAL OF THE AGENDA.

AM9201 It was moved by Miss Harrington and seconded by Mrs. Grey, to approve the agenda of the 1992 Annual Meeting. The motion was CARRIED.

### 2. ADOPTION OF THE MINUTES OF THE 1991 ANNUAL MEETING.

AM9202 It was moved by Dr. Tindall and seconded by Mrs. Grey, to adopt the minutes of the 1991 Annual Meeting. The motion was CARRIED.

### 3. REPORTS OF THE COUNCIL, OFFICERS AND COMMITTEES AND ADOPTION OF THE AUDITED FINANCIAL STATEMENTS.

#### 3.1 REPORT OF THE PRESIDENT

Mr. Lemay stated that his report was contained in the 1991 Annual Report. He did add, however, that since writing this report David Levy has discovered several more comets and at this point, Mr. Lemay admitted that he had 'lost count.'

#### 3.2 REPORT OF THE SECRETARY

Dr. Tindall stated that his report was also contained in the 1991 Annual Report. Dr. Tindall read letters from Dr. Ian Halliday, Honorary President, and Dr. Roy Bishop, Editor of The Observer's Handbook both expressing their regrets at being unable to attend this year's General Assembly.

He reported that Professor Owen Gingerich had accepted the invitation of the Society to become an Honorary Member.

Dr. Tindall reported that on June 19, 1992 the 61 cm telescope at the University of Toronto was renamed the Helen Sawyer Hogg Telescope. The special ceremony honoring Dr. Hogg was held at the David Dunlap Observatory in Richmond Hill, Ontario. The Society was represented by Mr. Broughton and Ms. Freeman. Dr. Tindall then read a note of thanks from Dr. Hogg for a lovely bouquet of lilies which was presented to her by the Society.

Members then rose as Dr. Tindall read the list of members who had passed away during the past year. A minute of silence was then observed.

Mr. Lemay thanked Dr. Tindall for his report.

#### 3.3 REPORT OF THE TREASURER

AM9203 It was moved by Mr. Miller and seconded by Mr. Spinney, to adopt the audited financial statement as published in the 1991 Annual Report. The motion was CARRIED.

Mr. Lemay thanked Mr. Miller for his report.

#### 3.4 REPORT OF THE NATIONAL LIBRARIAN:

Ms. Hall stated that her report had been presented to Council on Friday and that three motions had been approved by Council. These were that: the National Library will be turned into a reference library due to the age and fragile nature of the books; a computerized inventory of the books will take place; and a video loan section will be created. Ms. Hall then thanked the members of her committee — Dr. Hogg, Mr. Beattie, Mr. Broughton and Mr. McGregor for their assistance and she also expressed her thanks to Mr. Woodcock of the Hamilton Centre and Mrs. Crawford-Slover of the Toronto Centre for their assistance.

Mr. Lemay thanked Ms. Hall for her report.

#### 3.5 REPORTS OF STANDING COMMITTEES.

##### 3.5.1 REPORT OF THE AWARDS COMMITTEE

There was no report from the Awards committee.

##### 3.5.2 REPORT OF THE CONSTITUTION COMMITTEE

Mr. Watson reported that the By-Law amendments adopted at last year's General Assembly had been approved by the Ministry. He also stated that approval of the Model Centre By-Laws had been deferred one last time to the September meeting of National Council to allow Centres time for any further comments. Mr. Watson reported that Dr. Roy Bishop, after serving for eight years on the Constitution Committee, had decided to step down. Mr. Watson wished

to recognize the commitment and tremendous input that Dr. Bishop has had, not only to the Constitution Committee, but also to the Society as a whole.

Mr. Lemay thanked Mr. Watson for his report.

### **3.5.3 Report of the Executive Committee**

Mr. Lemay reported that the Executive had met that morning with Centre representatives who had submitted proxy votes dealing with the proposed fee increases. As the wording of the proxies varied from Centre to Centre, it was necessary for the Executive and those who had submitted proxies to agree on the interpretation of these proxies. Fortunately, all were in agreement.

### **3.5.4 REPORT OF THE FINANCE COMMITTEE**

Mr. Miller made a few brief comments at this time but stated that he would have more to say when the discussion of the fee increase arose.

### **3.5.5 REPORT OF THE HISTORICAL COMMITTEE**

There was no report from the Historical Committee.

### **3.5.6 REPORT OF THE LIBRARY COMMITTEE**

There was no further report from the Library Committee.

### **3.5.7 REPORT OF THE NOMINATING COMMITTEE**

Dr. Higgs reported that Ms. Hall was stepping down as National Librarian. Dr. Higgs stated that Mr. Gary Woodcock of the Hamilton Centre has been appointed as the new National Librarian to complete Ms. Hall's term.

### **3.5.8 REPORT OF THE PROPERTY COMMITTEE**

There was no report from the Property Committee.

### **3.5.9 REPORT OF THE PUBLICATIONS COMMITTEE**

Mr. Broughton commented on various aspects of the report of the Publications Committee which was submitted to Council at the Friday meeting. He singled out the tremendous contribution and commitment of the Editors of the national publications. He stated that the committee under its new chairperson, Dr. Hube, will be reviewing, with great interest, the findings of the Membership Survey. He thanked all members of the committee for their efforts. Mr. Broughton then took great pleasure in passing over the rather large stack of correspondence to Dr. Hube.

Mr. Lemay thanked Mr. Broughton for his report.

Professor Kennedy stated that the Executive of the Saskatoon Centre had a problem with the report of the Publications Committee which he would like to discuss further at the following National Council Meeting if possible. Mr. Lemay stated that he could see no problem with this request.

#### **3.5.9.1 REPORT OF THE EDITOR OF THE JOURNAL**

Dr. Tatum stated that he had presented his full report at the Friday Council Meeting. He apologized for the lateness of The Journal. He also commented on the vast amount of correspondence which he has received regarding the future of The Journal. Dr. Tatum would like to encourage more submissions from members.

Mr. Lemay thanked Dr. Tatum for his report.

Mr. Newton commented that his experiences with submitting papers to The Journal did a tremendous amount to encourage his interest in astronomy. However, he expressed his concern over the disproportionate number of professional papers published in The Journal. This led to a brief discussion on the criteria used for accepting or rejecting a paper for publication. Dr. Tatum stated that he does not consider whether the papers are written by an amateur or a professional but that the papers must be judged on their quality and although it is unfortunate and discouraging to the authors, there are some papers that simply don't measure up. Mr. Newton stated that The Journal is a wonderful vehicle for the membership and Centre representatives should encourage their members to submit articles to The Journal.

Mr. Lemay thanked Mr. Newton for his comments.

#### **3.5.9.2 REPORT OF THE EDITOR OF THE BULLETIN**

Mr. Kelly reported that there had been some format changes to the Annual Report and the Bulletin. He also reported that the first classified ad will be appearing in the June issue, as well, the rates for display ads has been changed and the new rates will be listed in the next issue of the Bulletin. Mr. Kelly informed members that next year, the April issue of the Bulletin will consist only of the Annual Report. He also reported on an issue which was raised at last year's Annual Meeting regarding the use of paper rather than a plastic wrapper. He stated that the switch to a paper wrapper would cost an additional \$4,300/year. He also encouraged members to submit more

photos of Centre activities and more information for the "Across the RASC" section.

Professor Kennedy then raised the issue of publishing all committee reports in the Annual Report in order to better inform the membership of the actions of the Society. This led to a lengthy discussion with the financial costs of such an endeavour being a prime concern. It was decided that the Executive and Finance Committees should look at this proposal more fully.

Mr. Lemay thanked Mr. Kelly for his report.

#### **3.5.9.3 REPORT OF THE EDITOR OF THE OBSERVER'S HANDBOOK**

Dr. Tindall stated that a full report from Dr. Bishop had been made at the Friday Council Meeting. However, he did inform members that the new price for a single copy of the 1993 Observer's Handbook will be \$14.95(\$16.00 including GST).

Mr. Lemay thanked Dr. Tindall for his report.

### **3.6 REPORT OF SPECIAL COMMITTEES**

#### **3.6.1 REPORT OF THE CENTENNIAL COMMITTEE**

Dr. Higgs reported that \$1850 had been contributed to the Centennial Fund this year. He also stated that Mr. Broughton's work on the book on the history of the R.A.S.C. was going well.

#### **3.6.2 REPORT OF THE COMPUTER USE COMMITTEE**

Mr. Miller reported that the computer was working well. He also stated that the Committee will be busy determining the best way for Centres to submit their membership information to National Office on disc rather than on paper.

Mr. Lemay thanked Mr. Miller for his report.

#### **3.6.3 REPORT OF THE MEMBERSHIP SURVEY COMMITTEE**

Mr. Hawley reported on the preliminary findings of the Membership Survey. So far, 385 surveys have been returned and 300 have been entered into the database, however, the section on personal information has not been entered as yet. He stated that, in general, members wanted the Society to spend more money but less on research grants to Centres, travel grants, Society publications and donations to third world countries. Most members felt that they were getting their money's worth. Most members were satisfied with the publications and felt that The Journal should remain unchanged but some felt that the Society should search for a cheaper format. A lengthy discussion followed. Mr. Hawley stated that he would be accepting survey forms until the end of December and that the preliminary findings would be sent out with the minutes of the Friday National Council Meeting.

Mr. Lemay thanked Mr. Hawley for his report.

#### **3.6.4 REPORT OF THE MINI-HANDBOOK COMMITTEE**

Mr. Enright summarized his report which he presented to Council on Friday. He stated that the dream of a committee struck many years ago had finally been realized with the publication of the first edition of The Beginner's Observing Guide. He also reported that over 200 copies had been sold through the Kingston Centre. The next issue is almost ready to go to the printers at Queen's University and in order to help in marketing The Guide, a new committee was created by Council at the last National Council Meeting, under the chairmanship of Mr. Attwood.

Mr. Lemay thanked Mr. Enright for his report.

#### **3.6.5 REPORT OF THE R.A.S.C. SEAL COMMITTEE**

Mrs. Grey reported that after several years of work, a new seal has been adopted for the Society. As well, two coloured versions of the seal, presented by Ms. Hall, have also been adopted for use with promotional items. On behalf of Mr. Auclair and the members of the R.A.S.C. Seal Committee, Mrs. Grey thanked Miss Harrington for her efforts and Mr. Fjeld of the Toronto Centre for creating the new design. Miss Harrington stated that she had copies of the new seal on disc for each Centre and asked for the Centre representatives to see her before the end of the weekend to pick up a copy for their Centre. Mrs. Grey reported that the R.A.S.C. Seal Committee has now been disbanded.

Mr. Lemay thanked Mrs. Grey for her report.

#### **3.6.6 REPORT OF THE SOLAR ECLIPSE EXPEDITION 1991 COMMITTEE**

Mr. Watson reported that a new 1994 Solar Eclipse Committee has been established by Council. This Committee will make use of the surplus funds from the 1991 Solar Eclipse Expedition to coordinate and undertake a public education program for the May 10, 1994 annular eclipse.

Mr. Lemay thanked Mr. Watson for his report.

#### **3.6.7 REPORT OF THE SPEAKER EXCHANGE COMMITTEE**

Mr. Loehde reported that several years ago this committee was asked to strike new guidelines aimed at increasing the use of the speaker exchange, including a one way speaker exchange. When the final guidelines were presented

to Council in February, the motion was defeated based mainly on financial concerns. However, due to the desirability and need for a policy allowing a one way speaker exchange, Council did approve a policy to permit a one way speaker exchange at the Friday National Council Meeting.

Mr. Lemay thanked Mr. Loehde for his report.

### 3.6.8 REPORT OF THE LIGHT POLLUTION COMMITTEE

Ms. Lewis reported that the committee was on track and that the committee will be reformed at the Council Meeting later today. She stated that she would be keeping the members informed of the committee's activities through articles in the Bulletin . A brief discussion followed on the merits of the Society becoming a member of the International Dark Sky Association. It was decided not to join at this time.

Mr. Lemay thanked Ms. Lewis for her report.

### 3.6.9 REPORT OF THE G.A. GUIDELINE COMMITTEE

There was no report from the G.A. Guideline Committee.

### 3.6.10 REPORT OF THE ASTRONOMY DAY COMMITTEE

Dr. Tindall reported that Astronomy Day 1993 will be held on Saturday, May 1st. He also reported that Mr. Dodson will not be continuing after that time. Council will, therefore, be looking for a replacement for Mr. Dodson.

Mr. Lemay thanked Dr. Tindall for his report.

## 4. BY-LAW AMENDMENTS

Mr. Watson reported that there were no by-law amendments to be considered.

## 5. ELECTION OF OFFICERS OF THE SOCIETY

Dr. Tindall stated that, as noted on the agenda, the following Offices of the Society were elected by acclamation:

President:	Mr. R. Peter Broughton
1st Vice-President:	Dr. Douglas P. Hube
2nd Vice-President:	Mr. Michael S.F. Watson
Treasurer:	Mr. Terry Hicks

## 6. ELECTION OF THE AUDITOR

**AM9204** It was moved by Mr. Miller and seconded by Mr. Spinney, that the firm of C.J. Tinkham & Associates be appointed as the auditors of the Society for another year. The motion was CARRIED.

## 7. PROPOSED MEMBERSHIP FEE INCREASE

**AM9205** It was moved by Mr. Miller and seconded by Dr. Hube, that for 1993 the Regular membership fee be \$40/year, Youth and Senior membership fees be \$24/year, and the Life membership fee be \$800.

Mr. Miller then presented the facts and figures used to determine the proposed fee increases. He stated that, due to decreases in both deferred membership fees and deferred Journal subscription fees and also lower interest revenue, in 1993 the Society will be looking at a decrease in revenue of \$14,000. He stated that the proposed fee increases would result in a final yield, if membership remains basically the same, of \$14,000 which would make up for the lost revenue only.

Mr. Lemay thanked Mr. Miller for his report.

A very lengthy discussion followed with most members strongly opposed to any fee increases without some clear indication of expense reductions on the part of the Council. The following amendment was then proposed:

**AM9206** It was moved by Mr. Watson and seconded by Mr. Attwood, that motion AM9205 be amended so that the regular membership fee be \$36/year, Youth and Senior membership fees be \$22.50/year; and the Life membership fee be \$720.

This led to a further lengthy, heated and at times, very emotional discussion. Dr. Tatum raised a point of order and asked for a ruling by the Chair on the validity of the amendment. Mr. Lemay ruled the amendment out of order.

**Motion AM9206 was ruled out of order.**

The vote on the original motion AM9205 was then called. Before the vote, Mr. Lemay called for two scrutineers to count the votes of those members present and also the additional proxy votes. Ms. Freeman and Mrs. Lee served as the scrutineers.

**Motion AM9205 was DEFEATED.**

The following motion was then made:

**AM9207** It was moved by Mr. Spinney and seconded by Dr. Higgs, that for 1993 the Regular membership fee be \$36; Youth and Senior membership fees be \$22.50; and the Life membership fee be \$720.

Another lengthy and heated discussion followed. Mr. Lemay then called for the vote and again Ms. Freeman served as the scrutineer for the vote.

**Motion AM9207 was DEFEATED.**

It was felt by the members that the directive to the Finance Committee to submit a balanced budget to Council will do much to aid the finances of the Society, although concern was still expressed over the cost of the publications. Dr. Hube assured the membership that he is committed to looking at all of the costs of the Society's publications.

**8. OTHER BUSINESS**

a) Other Expenses: Mr. Hicks stated that there were expenses other than the publications of the Society that should be looked into. Mr. Lemay stated that all items are going to be reviewed by the Finance Committee.

b) Thank You: Mrs. Grey, on behalf of the Society, offered a vote of thanks to Ms. Hall for raising \$1000 for the Society through the selling of the Society's promotional material.

c) Membership Survey: Mr. Pow suggested that all Centre representatives should go back to their membes and strongly encourage them to complete and send in the membership survey forms as soon as possible.

d) Balanced Budget: Mr. Comision stated that Mr. Lemay, Mr. Watson, Mr. Hicks and the members of the Finance Committee should be commended for demonstrating financial responsibility with the directive to submit a balanced budget to the National Council.

e) Youth Members: Dr. Hildebrand stated the Society needs to encourage more young people to join and participate in the Society. In order to achieve this goal, it may be necessary to consider lowering the membership fee for Youth members.

f) New Items: Ms. Hall reported that the Society will now be selling toques and turtle necks in addition to the regular promotional items already available.

Mr. Lemay then thanked the members for the honor of serving as President for the past two years. He stated that it has been quite a learning experience. He said that he would be remaining on Council for the next couple of years as Past President. He thanked the various members of Council for their assistance, especially Dr. Tindall and Ms. Freeman, who received a well deserved round of applause from the members.

Mr. Loehde then eloquently expressed the gratitude of the Society to Mr. Lemay for his many years of commitment to the Society. Mr. Lemay received a unanimous round of applause from the members.

Mrs. Grey then extended a vote of thanks to the members of the Calgary Centre which was also greeted with a round of applause from the members.

Mr. Lemay then welcomed the new members of the Executive: Mr. Broughton as President; Dr. Hube as 1st Vice President; Mr. Watson as 2nd Vice-President; and Mr. Hicks as Treasurer.

The new President, Mr. Broughton then presided over the remaining portion of the Annual Meeting. Mr. Broughton stated it was both an honor and a privilege to serve as the President of the Society and in a way, it was also intimidating when one looked at the list of illustrious people who have served as President over the history of the Society.

Mr. Broughton thanked: Mrs. Grey, who has now stepped down from Council, for her ten successive years on Council; Dr. Higgs, who continues to give time and leadership to the Society; Mr. Lemay for his unfailing good humour and common sense; Mr. Miller for his efforts as National Treasurer and the long hours he spent at National Office; and Ms. Hall for her service as the National Librarian and her appreciation of the historical importance of the National Library. A round of applause from the members followed.

As he is a teacher, Mr. Broughton stated that during March of 1993 he would visit Centres from Ottawa east and during March of 1994 he would visit Centres from Thunder Bay west. He will visit the rest of the Centres in Ontario as the need arises. He felt that the Society and the committees were in good hands and he thanked the members for their support. A round of applause followed.

**9. ADJOURNMENT**

**AM9208** It was moved by Mr. Spinney and seconded by Dr. Higgs, that the meeting adjourn. The motion was CARRIED.

The meeting was adjourned at 1:00 P.M.

**Respectfully submitted:**

*M. A. Harrington*

**Mary Anne Harrington,  
National Recorder**



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- Secretary • Jane Lund, 191 Wilshire Avenue, Ottawa, Ont. K2C 0E6
- Treasurer • Mercedes Pelayo, 25 Conover Street, Nepean, Ont. K2G 4C3 (613) 591-3119
- AstroNotes Editor • Doug George, 25 Conover Street, Nepean, Ont. K2G 4C3
- Librarian • RoseAnn Mussar
- Recorder • Estelle Rother
- Councillors • Bill Dey, Cathy Hall, Brain McCollough, Robin Molson, Ajai Sehgal
- National Council Representatives • Paul Comision, 3 St. Remy Drive, Nepean, Ont. K2J 1A4
- Robert Dick, 1855 Wembley Avenue, Ottawa, Ont. K2A 1A6

## Québec

- Centre Address • C.P. 9396, Ste-Foy, Qué. G1V 4B5
- Poste Electronique • beaucham@phy.ulaval.ca
- Président • Martin Rochette, 19 rue Bel Aire Appt. 203, Levis, Qué. G6V 6K9 (418) 643-5813
- Vice-Président • Patrick Dufour, 2807 Lanoraie, Ste-Foy, Qué. G1W 1M5 (418) 653-7719
- Secrétaire • Alain Daigle, 5457 rue du Menuet, Charny, Qué. G6X 2Y8 (418) 832-4100
- Trésorier • Jean-François Lallier, 3585 chemin Ste-Foy App. 206, Ste-Foy, Qué. G1X 1T1 (418) 653-0936
- Bibliothécaire • Dominique Beauchamp, 2627 de la Falaise, Ste-Foy, Qué. G1W 2B6 (418) 652-3462
- Directeur du group d'observateurs • Denis Martel, 719 11ième rue, Québec, Qué. G1J 2N3 (418) 525-8603
- Directeur des conférences • Guy Campeau, 5221 des Glaïeux, Charlesbourg, Qué. G1G 1L6 (418) 627-2339
- Directeur des observations • Patrick Dubé, 3315 France-Prime App. 601, Québec, Qué. G1W 4X3 (418) 654-1384
- Secrétaire exécutif • Danial Tardif, 65 Coubertin, Beauport, Qué. G1E 1G7 (418) 661-3098
- Conseillers • Gilles Chapdelaine, D. Fleury, Jonny Gauvin, Caroline St-Onge
- Répresentant a la S.R.A.C. • Jean-Marie Fréchette, 1054 d'Aubigny, Charlesbourg, Qué. G1H 1N1 (418) 626-9592

## Regina (1992)

- Centre Address • P.O. Box 20014, Cornwall Center, Regina, Sask. S4P 4J7
- President • Robert Brann, 2457 McKay Street, Regina, Sask. S4N 2T4
- Vice-President • Ross Parker, 2667 Rothwell Street, Regina, Sask. S4N 2E2
- Secretary • Doug Hala, 1726 Arthur Street, Regina, Sask. S4T 4W3
- Treasurer • Robert Klein, 2320 Elphistone, Regina, Sask. S4T 3P1
- Editor • Al Andrews, 3807 Van Horne Avenue, Regina, Sask. S4S 1M5
- National Council Representative • Ray Chomos, 1675 Shattuck Bay, Regina, Sask. S4X 9Z6 (306) 543-4722

## St. John's

- Centre Address • c/o Dennis Ryan, 74A Moores Drive, Mount Pearl, Nfld. A1N 3R4
- Electronic Mail • randy@kean.uacs.mun.ca
- President • Malcolm Simpson, P.O. Box 746 Goulds, Nfld. A1S 1G8 (709) 745-3190
- Vice-President • Fred Smith, 88 Cornwall Avenue, St. John's, Nfld. A1E 1Y9 (709) 579-7857
- Secretary • Dennis Ryan, 74A Moores Drive, Mount Pearl, Nfld. A1N 3R4 (709) 364-2924
- Treasurer • Phil McCausland, 51 Prince of Wales Street, St. John's, Nfld. A1C 4N1 (709) 574-7300
- Observing Chairman • Gary Ormond, 29 Woodwynd Street, Wedgewood Park, Nfld. A1A 3E1
- National Council Representative • Fred Smith, 88 Cornwall Avenue, St. John's, Nfld. A1E 1Y9 (709) 579-7857

## Sarnia (1992)

- Centre Address • c/o Ms. Alice Lester, 1091 Emily Street, Mooretown, Ont. N0N 1M0
- President • Ms. Alice Lester, 1091 Emily Street, Mooretown, Ont. N0N 1M0
- Vice-President • Zdenko Saroch, 371 Cameron Street, Sarnia, Ont. N7T 4B7
- Secretary • Jim Selinger, 160 George Street, Sarnia, Ont. N7T 7V4
- Treasurer • Brendan Flemming, 203-1/2 Water Street, Sarnia, Ont., N7T 5T4 (519) 336-7106
- Editor • Zdenko Saroch, 371 Cameron Street, Sarnia, Ont. N7T 4B7
- Director of Observing • Derek Hitchens, RR#6 Alvinston, Ont. N0N 1A0
- Recorder • Reg McMichael, RR#1 Camlachie, Ont. N0N 1E0 (519) 542-5947
- National Council Representative • James Townsend, P.O. Box 103, Wyoming, Ont. N0N 1T0

## Saskatoon

- Centre Address • P.O. Box 317, Sub P.O. #6, Saskatoon, Sask. S7N 0W0
- Honorary President • Dr. J.E. Kennedy, 323 Lake Crescent, Saskatoon, Sask. S7H 3A1 (304) 374-4614
- Past President • Darryl Rybotycki, 46 Morris Drive, Saskatoon, Sask. S7L 3T9, (306) 382-2146
- President • Don Friesen, 571 Gladmer Park, Saskatoon, Sask. S7J 2X3, (306) 343-1136
- Vice-President • Richard Huziak, 212-28th Street West, Saskatoon, Sask. S7L 0K3 (306) 665-3392
- Secretary • Bill Hydromako, 135 Manning Crescent, Saskatoon, Sask. S7L 6J3, (306) 384-4781
- Treasurer • Mike Williams, P.O. Box 130, Grandora, Sask. S0K 1V0, (306) 668-4365
- Editor • Gordon Sarty, 422 Edmund Park, Saskatoon, Sask. S7H 0Z4 (306) 374-8803
- Librarian • Jim Wood, 1529 Shannon Crescent, Saskatoon, Sask. S7H 2T6 (306) 373-6007
- Activity Coordinator • Sandy Ferguson, 401B Ave. U. South, Saskatoon, Sask. S7M 3T4 (306) 382-0898
- Councillors • Allan Hartridge
- National Council Representative • J.E. Kennedy, 323 Lake Crescent, Saskatoon, Sask. S7H 3A1 (304) 374-4614

## Thunder Bay

- Centre Address • 120 Riverview Drive, Thunder Bay, Ont. P7C 1R4
- President • James Zeleny, 150 Norwester Drive, RR#4 Thunder Bay, Ont. P7C 4Z2 (807) 475-3891
- Vice-President • Terence McDonald, 144 Melbourne Road, RR#5 Thunder Bay, Ont. P7B 5N1 (807) 767-1847
- Secretary • Robert C. Bishop, 135 Hogarth Street, Thunder Bay, Ont. P7A 7H1 (807) 767-5689
- Treasurer • Robert Mace, P.O. Box 146, Vickers Heights, Ont. POT 2Z0 (807) 475-4091
- Newsletter Editor • Terence McDonald, 144 Melbourne Road, RR#5 Thunder Bay, Ont. P7B 5N1 (807) 767-1847
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- Program Coordinator • Ted Bronson, 153 Inglewood Crescent, Thunder Bay, Ont. P7C 2E8 (807) 475-3406
- National Council Representative • Robert C. Bishop, 135 Hogarth Street, Thunder Bay, Ont. P7A 7H1 (807) 767-5689

## Toronto

- Centre Address • c/o McLaughlin Planetarium, 100 Queen's Park, Toronto, Ont. M5S 2C6 (416) 777-4300
- Electronic Mail • bchou@watserv1.uwaterloo.ca
- Honorary President • Dr. Ernest Seaquist, P.O. Box 360, Richmond Hill, Ont. L4C 4Y6 (416) 884-2112
- Past Presidents • Randy Attwood, 4348 Dallas Court, Mississauga, Ont. L4W 4G7 (416) 624-4629
- Ian McGregor, 4086 Blue Grass Court, Mississauga, Ont. L5C 3Y4 (416) 586-5743
- President • Steven Spinney, 154 John Tabor Trail, Scarborough, Ont. M1B 2P8 (416) 281-2392
- First Vice-President • Mary Anne Harrington, 118 Wolfrey Avenue, Toronto, Ont. M4K 1L3 (416) 463-2326
- Second Vice-President • Dr. John Percy, Erindale College, Mississauga, Ont. L5L 1C6 (416) 828-5343
- Secretary • Tony Horvatin, 8 Mountainview Avenue, Toronto, Ont. M6P 2L3 (416) 763-4339
- Treasurer • Dr. B. Ralph Chou, 5190 Mississauga Road, Mississauga, Ont. L5M 4Z2 (416) 567-8694

- Recorder • Neil Kinnear, 16 Park Road, RR#2 Sutton West, Ont. L0E 1R0 (416) 722-9963
- Honorary Councillor • Frederic Troyer, 1703-2330 Bridletowne Circle, Scarborough, Ont. M1W 3P6
- Councillors • Robert Chapman, Brian Cheeney, Philip Gebhardt, John Ginder, Bill Hodges, Robert May, Guy Nason, Kim Sprague, Robert Taylor
- National Council Representatives • Randy Attwood, Robert May, Ian McGregor, Steven Spinney, Frederic Troyer

### Vancouver

- Centre Address • c/o Gordon Southam Observatory, 1100 Chestnut Street, Vancouver, B.C. V6J 3J9
- Electronic Mail • skene@ucs.ubc.ca
- Honorary President • Dr. John S. MacDonald, 6237 Marguerite Street, Vancouver, B.C. V6M 1E5
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- Vice-President • Steve Whitehouse, 7425 18th Avenue Apt. 202, Burnaby, B.C. V3N 1H6
- Secretary • Mrs. Sally Baker, 7680 Columbia Street Apt. 308, Vancouver, B.C. (604) 324-3309
- Treasurer • Cecile Dar Santos, 212 West 14th Avenue, Vancouver, B.C. V5Z 1P6
- Editors of NOVA • Mike Chutter, Ken Nelson
- Observing Chairman • Gerry Knight, 729 Semlin Drive, Vancouver, B.C. V5L 4J4 (604) 253-2139
- Librarian • Heather McNabb, 4577-56A, Delta, B.C. V4K 3C7
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- Councillors • Giovanni Andreis, Victor Amey, Dan Collier, Frank Marino, Martin Otterson, David Savelieff
- National Council Representative • Rajiv Gupta, 2476 West 1st Avenue, Vancouver, B.C. V6K 1G6 (604) 733-0682

### Victoria

- Electronic Mail • rasc@uvvm.uvic.ca
- Honorary President • Dr. John Climenhaga, 2450 Sutton Road, Victoria, B.C. V8N 1J2
- Past President • Jack Newton, 640 Cairns Way, RR#1 Sooke, B.C. V0S 1N0 (604) 642-6601
- President • Don Dundee, 928 Claremont Avenue, Victoria, B.C. V8Y 1K3 (604) 658-8458
- First Vice-President • Gareth Shearman, 1216 Clovelly Terrace, Victoria, B.C. V8P 1V6
- Second Vice-President • Don Moffat, 1010 McKenzie Avenue Apt. 303, Victoria, B.C. V8X 4B2
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- Skynews Co-editor • Mae Sherman, 1216 Clovelly Terrace, Victoria, B.C. V8P 1V6
- Librarian • Sid Sidhu, 4396 Tremblay Drive, Victoria, B.C. V8N 4W5 (604) 477-9315
- Director of Telescopes • Sid Sidhu, 4396 Tremblay Drive, Victoria, B.C. V8N 4W5 (604) 477-9315
- Recorder • Sandra Barta, 277 Plowright Road, Victoria, B.C. V9B 1P4 (604) 479-0259
- Councillors • G. Ball, Jack Braniff, Mary-Clare Carder, J. Hesser, John Howell, F. Ogonski, J. Pazder, D. Wright
- National Council Representative • Jack Newton, 640 Cairns Way, RR#1 Sooke, B.C. V0S 1N0 (604) 642-6601

### Windsor

- Electronic Mail • jhusch@ucc.uwindsor.ca
- Honorary President • Dr. Mordechat Schlesinger, University of Windsor, Windsor, Ont. N9B 3P4
- Past President • Steve Pellarin, 3140 Parkwood Avenue, Windsor, Ont. N8W 2K4 (519) 966-0713
- President • Dan Taylor, 1182 Chilver Road, Windsor, Ont. N8S 2J4 (519) 252-1587
- Vice-President • Tim Bennett, RR#2 Essex, Ont. N8M 2X6 (519) 776-8901
- Secretary • C. Joady Ulrich, 5450 Haig Avenue, Windsor, Ont. N8T 1K9 (519) 945-3132
- Treasurer • John Hurley, 427 County Road #34, RR#1 Essex, Ont. N9V 2Y9 (519) 726-6971
- Assistant Treasurer • Frank J. Shepley, 344 South Middle Road, RR#2 Maidstone, Ont. N0R 1K0 (519) 723-2389
- Aurora Editor • Dave Marchand, 1460 Westminster Boulevard, Windsor, Ont. N8P 1W9 (519) 948-0296
- Aurora Co-editor • Frank J. Shepley, 344 South Middle Road, RR#2 Maidstone, Ont. N0R 1K0 (519) 723-2389
- Aurora Staff • Tim Bennett, Paul Preney
- Director of Observing • Susan Sawyer-Beaulieu, 1112 Coachwood Plcae, Windsor, Ont. N9H 2G3
- Librarian • Tom Sharron, 409 Matthew Brady Boulevard, Windsor, Ont. N8S 3J5
- Councillors • R. Clark, Randy Groundwater, Bart Huneault, Henry Lee, Dave Marchand, John McDermott, Jim Meredith, Mike Mastronardi, Paul Preney, Susan Sawyer-Beaulieu
- National Council Representative • Frank J. Shepley, 344 South Middle Road, RR#2 Maidstone, Ont. N0R 1K0 (519) 723-2389

### Winnipeg

- Centre Address • Room 110, St. Paul's College, 430 Dysart Road, Winnipeg, Man. R3T 2M6
- Electronic Mail • cbrown@ccm.umanitoba.ca
- Past President • Chris Rutkowski, P.O. Box 1918, Winnipeg, Man. R3C 3R2 (204) 269-7553
- President • Stan Runge, 35 Cunard Place, Winnipeg, Man. R3T 5M1 (204) 261-9984
- First Vice-President • Paul Paradis, P.O. Box 244, St. Adolphe, Man. R0A 0T6 (204) 883-2411
- Second Vice-President • Scott Young, P.O. Box 19, St. Germain, Man. R0G 2A0 (204) 254-4422
- Secretary • Gil Raineault, 12 Greenmount Road, Winnipeg, Man. R2J 1T4 (204) 253-4989
- Treasurer • Chris Brown, 183 Canora Street, Winnipeg, Man. R3G 1T1 (204) 253-6392
- Councillors • Jay Anderson, Kevin Black, Chris Rutkowski, Mike Wegner, Guy Westcott
- National Council Representative • Stan Runge, 35 Cunard Place, Winnipeg, Man. R3T 5M1 (204) 261-9984

Centre Councils for 1993

# Centre Finances

	Calgary	Edmonton	Halifax	Hamilton	Kingston	Kitchener Waterloo	London	Montréal	C.F. de Montréal	Niagara	Ottawa
<b>REVENUE</b>											
Membership Fees	\$5,437	\$4,172	\$3,183	\$4,199	\$1,690		\$1,623	\$4,733	\$945	\$1,270	\$6,252
Life Member Grants	\$230	\$115	\$397	\$38	\$102		\$77	\$243	\$26	\$38	\$410
Donations	\$988	\$161	\$157	\$1,899	\$125		\$10	\$127	-	\$584	\$9,290
Educational Activities	\$1,978	\$442	\$20	\$711	-		-	-	-	-	-
Interest & Dividends	\$621	\$1,159	\$108	\$97	\$17		\$184	\$4,428	-	\$79	\$765
Sale Of Handbooks (Net)	\$146	\$62	(\$320)	\$50	\$119		\$3	\$68	-	\$32	\$119
Advertising	-	-	\$20	\$184	\$25		-	-	-	-	\$260
G. A. (inc. Travel Grants)	\$395	-	\$359	\$253	\$372		\$252	-	\$62	-	-
Other Grants	-	\$48,433	\$195	-	-		-	-	-	-	-
Miscellaneous	\$2,452	\$343	\$33	\$434	\$47		\$226	\$457	-	\$1,502	\$528
<b>Total Revenue</b>	<b>\$12,247</b>	<b>\$54,887</b>	<b>\$4,152</b>	<b>\$7,865</b>	<b>\$2,498</b>		<b>\$2,492</b>	<b>\$10,966</b>	<b>\$1,033</b>	<b>\$3,505</b>	<b>\$16,624</b>
<b>EXPENDITURES</b>											
Fees to National Office	\$3,235	\$2,286	\$2,162	\$1,750	\$1,106		\$768	\$1,743	\$864	\$845	\$3,751
Library	\$23	\$412	\$20	\$240	\$25		-	\$291	-	-	-
Meetings & Newsletters	\$1,229	\$1,481	\$1,325	\$1,912	\$510		\$223	\$1,146	-	\$609	\$2,755
Annual Dinner (Net)	\$212	\$86	(\$197)	-	-		(\$40)	-	-	-	\$9
G. A. (inc. Travel Grants)	-	-	\$613	\$353	\$372		\$252	\$365	\$337	-	-
Equipment & Supplies	\$4,292	\$11,546	-	\$932	\$236		-	\$158	-	-	-
Office Administration	-	\$130	\$175	\$133	-		-	\$1,172	-	\$75	\$565
General Expense & Audit	\$991	\$101	-	\$117	\$202		\$142	\$237	-	-	-
Educational Activities	\$258	-	\$300	-	-		-	-	-	-	-
Insurance	\$1,028	\$100	-	\$440	-		-	\$691	-	-	\$430
Awards & Donations	-	\$118	\$166	\$100	\$77		-	\$124	\$116	-	-
Observatory Expenses	\$850	-	-	\$1,274	-		\$145	\$2,755	-	\$2,766	\$961
Miscellaneous	\$1,732	-	\$66	\$210	\$144		\$429	-	-	\$278	-
<b>Total Expenditures</b>	<b>\$13,850</b>	<b>\$16,260</b>	<b>\$4,630</b>	<b>\$7,461</b>	<b>\$2,672</b>		<b>\$2,005</b>	<b>\$8,682</b>	<b>\$1,317</b>	<b>\$4,573</b>	<b>\$8,041</b>
<b>Surplus (Deficit)</b>	<b>(\$1,603)</b>	<b>\$38,627</b>	<b>(\$478)</b>	<b>\$404</b>	<b>(\$174)</b>		<b>\$487</b>	<b>\$2,284</b>	<b>(\$284)</b>	<b>(\$1,068)</b>	<b>\$8,583</b>
Balance from 1991	\$17,874	\$8,426	-	\$3,153	-		-	-	-	\$1,434	-
Balance to 1992	\$16,292	\$47,053	-	\$3,557	-		-	-	-	\$366	-
Other Assets	\$90,162	\$15,501	\$9,674	-	-		-	-	-	\$12,018	\$30,102

No Report Received

	Québec	Regina	St. John's	Sarnia	Saskatoon	Thunder Bay	Toronto	Vancouver	Victoria	Windsor	Winnipeg
<b>REVENUE</b>											
Membership Fees	\$2,826		\$1,098	\$295	\$948	\$1,160	\$22,990	\$11,113	\$3,740	\$1,203	\$2,221
Life Member Grants	\$20		\$51	\$13	\$51	-	\$1,075	\$205	-	\$26	-
Donations	\$104		\$60	-	\$385	-	\$1,296	\$17	\$131	\$279	\$234
Educational Activities	-		-	-	-	-	-	-	-	-	-
Interest & Dividends	\$184		\$3	\$18	\$292	-	\$2,873	\$187	\$803	\$17	\$69
Sale Of Handbooks (Net)	\$1,398		\$116	-	-	-	-	-	-	\$149	\$196
Advertising	\$240		\$471	-	-	\$296	\$819	\$240	-	-	-
G. A. (inc. Travel Grants)	-		\$471	-	-	\$296	\$1,403	\$275	\$186	-	\$230
Other Grants	\$400		\$144	\$42	\$253	\$665	\$2,222	\$17,867	-	-	-
Miscellaneous	-		-	-	-	-	-	-	\$295	\$528	-
<b>Total Revenue</b>	<b>\$5,172</b>		<b>\$1,943</b>	<b>\$368</b>	<b>\$1,929</b>	<b>\$2,121</b>	<b>\$32,764</b>	<b>\$29,904</b>	<b>\$5,155</b>	<b>\$2,202</b>	<b>\$2,950</b>
<b>EXPENDITURES</b>											
Fees remitted to National Office	\$1,115		\$854	\$223	\$588	\$739	\$13,798	\$3,717	\$2,004	\$722	\$845
Library	\$322		-	-	\$36	-	-	\$111	\$110	\$228	-
Meetings & Newsletters	-		-	\$135	\$323	\$824	\$6,634	\$5,330	\$1,415	\$441	-
Annual Dinner (Net)	\$75		-	-	-	-	\$423	(\$57)	\$444	-	-
G. A. (inc. Travel Grants)	-		\$472	-	-	\$296	\$1,403	\$136	\$373	-	\$230
Equipment & Supplies	\$875		\$249	-	-	-	-	\$3,244	-	\$184	-
Office Administration	\$553		\$11	\$3	\$77	-	\$1,868	\$1,028	\$91	-	-
General Expense & Audit	\$100		-	-	-	\$19	-	-	-	\$377	\$837
Educational Activities	\$100		-	-	\$32	-	\$447	\$309	-	-	-
Insurance	\$381		-	-	\$262	-	-	-	-	-	-
Awards & Donations	-		-	-	-	-	-	-	\$87	\$20	\$150
Observatory Expenses	\$462		-	-	-	-	-	\$1,815	\$813	-	\$710
Miscellaneous	\$1,018		50	\$102	\$117	\$73	\$4,559	\$12,107	\$473	\$144	-
<b>Total Expenditures</b>	<b>\$5,001</b>		<b>\$1,636</b>	<b>\$463</b>	<b>\$1,435</b>	<b>\$1,951</b>	<b>\$29,132</b>	<b>\$27,740</b>	<b>\$5,810</b>	<b>\$2,116</b>	<b>\$2,772</b>
<b>Surplus (Deficit)</b>	<b>\$171</b>		<b>\$307</b>	<b>(\$95)</b>	<b>\$494</b>	<b>\$170</b>	<b>\$3,632</b>	<b>\$2,164</b>	<b>(\$655)</b>	<b>\$86</b>	<b>\$178</b>
Balance from 1991	\$2,823		\$148	\$735	-	\$798	\$43,446	\$8,573	-	\$428	-
Balance to 1992	\$2,994		\$455	\$640	-	\$968	\$47,078	\$10,737	-	\$514	-
Other Assets	-		\$1,996	-	\$15,590	-	\$47,664	\$18,783	\$49,601	-	\$1,142

No Report Received

Centre Finances



The "official" 1992 G.A. pyramid. From left to right: Bottom: Patrick Kelly (Halifax), Steven Spinney (Toronto), Glenn Hawley (Calgary), James T. Himer (Calgary), Glenn Skene (Vancouver), Peter Sim (Calgary); Second: Henry Lee (Windsor), Michael Watson (Unattached), Robert Loblaw (Calgary), Andrew Jones (Calgary), Ron Forth (Calgary); Third: Murray Paulson (Edmonton), David Lane (Halifax), Don Hladiuk (Calgary), Grace Nelson (Calgary); Top: Stan Runge (Winnipeg)



Astronomy Day in Kingston. Leo Enright (left) and Ian Levstein chat with interested shoppers.



Astronomy Day in Toronto. The public star night at Humber Bay Park West.



Astronomy Day in Toronto. We always knew that grinding a 3-inch mirror was child's play!



Astronomy Day in Toronto. Playing "Planetary Twister" at the Ontario Science Centre.



**Tinkham & Associates**  
CHARTERED ACCOUNTANTS

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AUDITORS' REPORT

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

We have audited the balance sheet of The Royal Astronomical Society of Canada as at December 31, 1992 and the statements of income and retained earnings for the year then ended. These financial statements are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the company as at December 31, 1992 and the results of its operations for the year then ended in accordance with generally accepted accounting principles.

TORONTO, Ontario  
January 21, 1992

*Tinkham & Associates*  
CHARTERED ACCOUNTANTS

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA  
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA  
BALANCE SHEET  
AS AT DECEMBER 31, 1992

ASSETS

	1992	1991
<b>CURRENT</b>		
Cash and short term investments	\$ 101,675	\$ 92,891
Accounts receivable	33,182	51,003
Prepaid expenses	1,874	2,075
Accrued interest receivable	11,298	12,149
	<u>148,029</u>	<u>158,118</u>
<b>INVESTMENTS</b>		
Marketable securities - at cost	-	3,019
<b>SPECIAL PURPOSE FUNDS (Schedule C)</b>		
Cash and short term deposits	79,305	80,193
(including accrued interest)	101,600	101,600
Guaranteed investment certificate	<u>180,905</u>	<u>181,793</u>
<b>CAPITAL ASSETS</b>		
Office building, furniture, equipment, library (nominal value)	<u>1</u>	<u>1</u>
	\$ <u>328,935</u>	\$ <u>342,931</u>

LIABILITIES

<b>CURRENT</b>		
Payables and accrued charges	\$ 19,826	\$ 56,305
Deferred revenue		
- Membership fees for ensuing year	30,822	21,372
- Journal subscriptions	20,353	17,741
- Unappropriated life membership fees (Schedule A)	<u>33,996</u>	<u>35,785</u>
	104,997	131,203
<b>SPECIAL PURPOSE FUNDS (Schedule C)</b>		
	<u>180,905</u>	<u>181,792</u>

EQUITY

<b>EQUITY</b>		
Balance, January 1	29,936	15,666
Add: Excess of revenue over expenditure	13,097	14,270
Balance, December 31	<u>43,033</u>	<u>29,936</u>
	\$ <u>328,935</u>	\$ <u>342,931</u>

On behalf of the Council of the Society  
*R. Brougham*

President

*Z. H. Hicks*  
Treasurer

Accounting principles - Note 1

*Tinkham & Associates*

National Finances

# National Finances

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA  
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA  
STATEMENT OF REVENUE AND EXPENDITURE  
FOR THE YEAR ENDED DECEMBER 31, 1992

	1992	1991
<b>REVENUE</b>		
Membership fees	\$ 45,459	\$ 44,070
- R.A.S.C. Centres	17,180	19,526
- Individual members	1,789	1,883
- Life membership: annual appropriation	64,428	65,479
Grants and Donations	5,000	10,000
- Government of Canada-annual grant	-	125
- Miscellaneous donations	5,000	10,125
Publications	23,836	25,353
- R.A.S.C. Journal: subscriptions	2,035	1,740
reprints	10,719	8,787
publishing revenue	92,858	93,073
- Observer's Handbook	129,448	128,953
Miscellaneous income	16,885	18,432
- interest on investment	948	1,237
- insignia sales	12,790	12,184
- rent	30,623	31,853
	229,499	236,410
<b>EXPENDITURE</b>		
Publications (Schedule B)	124,390	132,266
Office salaries and employee benefits	39,312	40,914
Postage and shipping expense	4,656	4,889
General and office expense	6,499	4,385
Stationery, printing and supplies	771	3,032
Life membership allotment to Centres	3,520	6,183
General assembly and travel expense	17,178	12,113
Legal and accounting	1,925	1,875
Insignia, medals and awards	563	566
Telephone	1,068	572
Insurance	4,081	2,776
Library expense	191	707
Office equipment purchases	103	2,478
Grant	3,649	1,964
Bad debts		483
Building expenses	8,496	6,937
	216,402	222,140
<b>EXCESS OF REVENUE OVER EXPENDITURES</b>	\$ 13,097	\$ 14,270

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THE ROYAL ASTRONOMICAL SOCIETY OF CANADA  
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA  
NOTES TO THE FINANCIAL STATEMENTS  
DECEMBER 31, 1992

NOTE 1 ACCOUNTING POLICIES

The financial statements of the Society have been prepared in accordance with accounting policies generally followed by similar non-commercial organizations. The significant accounting policies observed in the preparation of these statements are summarized below.

(a) Membership fees:

Members' fees are credited to income for the related membership year. Accordingly, fees received at the end of the year for the ensuing year are included in deferred revenue. Life membership fees are credited to deferred revenue when received. Five percent of the life membership fund is transferred annually to the general account.

(b) Publications:

Subscriptions to the R.A.S.C. Journal are credited to income for the subscription period.

(c) Investments:

Investments are stated at cost. Investment income is recorded on the accrual basis.

(d) Special purpose funds:

The special funds of the Society are classified in accordance with the objectives specified by the donors or in accordance with directives issued by Council. The income of the various funds is recorded on the accrual basis.

(e) Fixed assets:

The office furniture, equipment and the library of the Society are carried in the accounts at a nominal value. The cost of additions to and replacements of fixed assets are expensed as they are incurred.

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

SCHEDULE A  
UNAPPROPRIATED LIFE MEMBERSHIP FEES  
FOR THE YEAR ENDED DECEMBER 31, 1992

	1992	1991
BALANCE, January 1	\$ 35,785	\$ 37,028
Add: life membership fees received in the year	-	640
	35,785	37,668
Deduct: Appropriation to general account	1,789	1,883
BALANCE, December 31	\$ 33,996	\$ 35,785

SCHEDULE B  
PUBLICATION COSTS

R.A.S.C. JOURNAL

Printing of Journal	\$ 51,150	\$ 46,920
Printing of Bulletin	22,409	21,564
Editorial assistance	1,000	1,750
Distribution costs	11,551	21,147
Reprints	1,920	1,220
	88,030	92,601

OBSERVER'S HANDBOOK

Printing	29,257	31,806
Distribution costs	5,869	6,521
Advertising	1,234	1,338
	36,360	39,665
	\$ 124,390	\$ 132,266

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THE ROYAL ASTRONOMICAL SOCIETY OF CANADA  
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA  
SCHEDULE C  
COMPOSITION OF SPECIAL PURPOSE FUNDS  
AS AT DECEMBER 31, 1992

	RUTH NORTHCOTT FUND	P.M.MILLMAN ENDOWMENT FUND	CEN- TENNIAL FUND	SOLAR ECLIPSE FUND	TOTAL
Cash	\$ 824	\$ 4,766	\$ 7,490	\$ 8,655	\$ 21,735
Term deposits	28,000	14,000	5,000	-	47,000
G.I.C.	9,000	101,600	-	-	110,600
Accrued interest	1,570	-	-	-	1,570
	\$ 39,394	\$ 120,366	\$ 12,490	\$ 8,655	\$ 180,905

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National Finances

The following awards were presented to society members in 1992:

Awards

**The Plaskett Medal**

Dr. Eric Poisson (University of Alberta)

**Service Award Medal**

Jean-Marie Frechette (Québec)

Michael Watson (Unattached)

Quotes

All sciences are connected; they lend each other material aid as parts of one great whole, each doing its own work, not for itself alone, but for the other parts; as the eye guides the body and the foot sustains it and leads it from place to place.

**Roger Bacon**  
English philosopher  
(1220-1292)

That he [Einstein] may sometimes have missed the target... as, for example, in his hypothesis of light quanta, cannot really be held against him. [From his letter proposing the young Einstein as a member of the Royal Prussian Academy of Science.]

**Max Planck**  
German physicist  
(1858-1947)

Let no one expect anything in the way of certainty from astronomy, since astronomy can offer us nothing certain, lest, if anyone take as true that which has been constructed for another use, he go away from this discipline a bigger fool than when he came to it.

**Nicholas Copernicus**  
Polish astronomer  
(1473-1543)

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