



Supplement to the JOURNAL

of the **ROYAL ASTRONOMICAL**
SOCIETY of **CANADA**

ANNUAL REPORT 1988

APRIL 1989

PRESIDENTS OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

1890–1894	C. Carpmael	1941–1942	F.S. Hogg
1895	L.W. Smith	1943–1944	A.V. Douglas
1896–1897	J.A. Paterson	1945–1946	A.E. Johns
1898–1899	A. Harvey	1947–1948	J.W. Campbell
1900–1902	G.E. Lumsden	1949–1950	A. Thompson
1902–1903	R.F. Stupart	1951–1952	C.S. Beals
1904–1907	C.A. Chant	1953–1954	J.F. Heard
1908–1909	W.B. Musson	1955–1957	R.M. Petrie
1910–1911	A.T. DeLury	1957–1959	H.S. Hogg
1912–1913	L.B. Stewart	1959–1960	A. McKellar
1914–1915	J.S. Plaskett	1960–1962	P.M. Millman
1916–1917	A.D. Watson	1962–1964	R.J. Northcott
1918–1919	A.F. Miller	1964–1966	K.O. Wright
1920–1921	J.R. Collins	1966–1968	M.M. Thomson
1922–1923	W.E.W. Jackson	1968–1970	J.E. Kennedy
1924–1925	R.M. Stewart	1970–1972	H. Simard
1926–1927	A.F. Hunter	1972–1974	J.L. Locke
1928–1929	W.E. Harper	1974–1976	J.D. Fernie
1930–1931	H.R. Kingston	1976–1978	A.H. Batten
1932–1933	R.K. Young	1978–1980	J.R. Percy
1934–1935	L. Gilchrist	1980–1982	I. Halliday
1936–1937	R.E. DeLury	1982–1984	F. Loehde
1938–1939	W. Findlay	1984–1986	R.L. Bishop
1940	J.A. Pearce	1986–1988	M. Grey
		1988–	L.A. Higgs

SECRETARIES OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Corresponding Secretary 1890–1901; Secretary 1902–1919, General Secretary 1920–1949; National Secretary 1950 onwards.

1890–1899	G.E. Lumsden	1935–1958	E.J.A. Kennedy
1900–1902	W.B. Musson	1958–1964	J.E. Kennedy
1902–1917	J.R. Collins	1964–1971	N. Green
1918–1919	W.E.W. Jackson	1971–1974	C.E. Hodgson
1920–1923	A.F. Hunter	1974–1977	D.J. FitzGerald
1924–1927	F.T. Stanford	1978–1980	N. Green
1928–1931	L. Gilchrist	1981–1987	R.P. Broughton
1932–1935	R.A. Gray	1987–	D.A. Tindall

HONORARY MEMBERS OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Dr. V.A. Ambartsumian (U.S.S.R.)	Dr. W. Iwanowska (Poland)
Dr. R.B. Baldwin (U.S.A.)	Dr. J.H. Oort (Netherlands)
Dr. F.M. Bateson (N.Z.)	Mr. Grote Reber (Tasmania)
Dr. R. Hanbury Brown (Australia)	Dr. A.R. Sandage (U.S.A.)
Dr. A. Dollfus (France)	Dr. Martin Schwarzschild (U.S.A.)
Dr. Stephen W. Hawking (England)	Dr. A. Unsold (Germany)
Dr. Helen S. Hogg (Canada)	Prof. H.C. van de Hulst (Netherlands)

REPORT OF THE PRESIDENT

I have now had the honour of serving the Society as its National President for just seven months, but am pleased to have this opportunity to comment on the state of the Society and the achievements of its members. The past few years have been difficult ones for astronomy in Canada, with financial restraint in the funding agencies being the theme of the day. Elsewhere, tragic accidents have aggravated funding difficulties, resulting in a delay of the launch of the Hubble Telescope until early in 1990 and the loss of a major radio telescope in the United States. It is in a period such as this that societies like the Royal Astronomical Society of Canada can play a major role in maintaining public interest and support for our science. I must not, however, give the impression that the last few years have been entirely a period of frustration and inactivity in astronomy in Canada. The Canada-France-Hawaii Telescope continues to be an outstanding facility for Canadian astronomy and the ever more sophisticated instrumentation that is being added to it guarantees a long and productive future. Canadian involvement in the James Clerk Maxwell Telescope is just now getting into its stride and more and more Canadian radio astronomers are benefiting from its capabilities. The Canada Astronomy Data Centre at the Dominion Astrophysical Observatory is providing access to electronic astronomical databases to numerous Canadian astronomers. Moreover, the hopes for the future are not being ignored with both the optical and radio astronomical communities considering various options for new telescopes for Canada in the coming decade.

Just as professional astronomers are looking optimistically to the future, the Royal Astronomical Society of Canada is nearing the end of its first century with vigour and enthusiasm. Our Society was first incorporated in 1890, and has come a long way since then. We now have 21 Centres across the country (having this year welcomed the first new Centre since 1981) and the annual budget of the Society is approaching \$200,000. In the last year or so, electronic mail has played a major role in the daily operations of the Society. A complete revamping of the constitution of the Society, recognizing the many changes in the structure of our organization that have occurred over the past twenty years, has been carried out, and a more professional approach is now being taken with regard to such things as travel expenses of officers of the Society. In conjunction with the Canadian Astronomical Society, the Plaskett Medal has been established as an award for young professional astronomers and, also in association with the C.A.S., the series of Helen Sawyer Hogg Public Lectures continues to bring the excitement of astronomy to the Canadian public. With the approach of our centennial celebrations, the Society has established a Centennial Fund to provide financial assistance for several exciting new initiatives the Society may take in its public information role.

In 1988, the Society saw its General Assembly held in conjunction with two other societies with similar interests, the Astronomical Society of the Pacific and the Western Amateur Astronomers. The Victoria Centre of the R.A.S.C., from the initial stimulus of Muriel Enoch to the final execution by an organizing committee headed by Jack Newton, put on an excellent meeting. Unlike some joint meetings which never seem to meet their much heralded expectations, this was an outstanding success. Combined with a scientific symposium sponsored by the Dominion Astrophysical Observatory and the 100th annual meeting of the Astronomical Society of the Pacific, the General Assembly brought our members in contact with large numbers of fellow amateur and professional astronomers from North America and overseas. During the meeting, the Society bestowed Service Awards on Alan Batten, Roy Bishop, Jack Locke and Eric Orr. The Chant Medal was presented to Chris Spratt and Philip Teece received the Ken Chilton Prize. Members of the R.A.S.C. also figured prominently among recipients of awards of the two other societies at the joint meeting, with Jack Newton receiving the Amateur Achievement Award of the A.S.P., and David Levy accepting the Barnard Award of the W.A.A.

Aside from the above awards, other members of our Society had notable achievements in 1988. As our outgoing President, Mary Grey, noted in her address at the General Assembly, David Levy discovered his fourth comet early in the year, and he and Alan Batten, Jack Newton and Philip Teece all had books published. During the year, five Canadian astronomers of whom several have strong connections with the R.A.S.C. were recognized by having minor planets named after them: Feldman (jointly with another Feldman), Northcott, Levy, Tatum and Balum.

Our Society's publications continue to flourish. The Observers Handbook, under the fine editorship of Roy Bishop, is still one of the best sources of astronomical information available anywhere and continues

to provide the income that supports our other two publications, the *JOURNAL* and the *National Newsletter*. The latter is evolving, under Ian McGregor's capable guidance, into a news magazine which accurately mirrors the interests and activities of the Society, while the *JOURNAL* remains somewhat unique amongst international publications in its presentation of refereed papers on a wide range of topics related to astronomy. Alan Batten has done an outstanding job as Editor of the latter for eight years and has now decided that it is time to pass the job on to someone new. (Alan had well surpassed the length of term of myself and of Ian Halliday in this position, but couldn't quite keep up with the term of Ruth Northcott or the amazing 50 years that C. A. Chant served!) He will now be succeeded by Jeremy Tatum, to whom we offer our thanks for accepting the job and to whom we all wish every success. Also in connection with the *JOURNAL*, I would like to thank Christine Clement for her many years as Book Review Editor (now to be taken on by John Percy) and Marie Fidler for the invaluable assistance given to a continuing sequence of Editors.

There are several changes in the officers of the Society that should be noted. Ralph Chou is ending a three-year term as Treasurer (on top of a previous four plus years as Editor of the *National Newsletter*) and we would like to thank Ralph for his efforts which have left the Society in a solid financial state. Leo Enright has completed a six-year term as Recorder, succeeded by Henry Lee, and we would like to thank him for the almost 100 hours of meetings that he has succinctly transcribed to paper. Leo has also served for many years as Astronomy Day Coordinator for the Society, a task now taken on by Steve Dodson, and receives our thanks for a second job well done. It should be mentioned that Ian Halliday, with the end of his term on the Nominating Committee in 1988, has served National Council for twelve consecutive years, following six years as *JOURNAL* Editor. Finally, I would like to take this opportunity to thank all of the officers of the National Council who have made my first few months so manageable, in particular our wonderful Past President, Mary Grey, whose experience and human insight has been of invaluable assistance. Our Executive Secretary, upon whose shoulders so many of the burdens of the Society rest, has now been with us for sixteen years, but Rosemary Freeman continues to manage our office with youthful enthusiasm and skill and I especially thank her for her efforts on our behalf.

During the first few months of my term in office, and the preceding year, I have had the opportunity to visit some of our Centres across the country: Halifax, Vancouver and the two Montreal Centres, as well as amateur astronomers interested in the R.A.S.C. in Prince Edward Island. I never cease to be impressed by the enthusiasm, competence and dedication of our members and I am sure that our Society will continue to be strong and effective in the year ahead.

LLOYD HIGGS, *President*

REPORT OF THE NATIONAL SECRETARY

Before writing this report I had the pleasure of reading many of the reports from the Centres of the Society. They make fascinating reading and I encourage you to read them to see a snapshot of the many activities which our members are involved in from coast-to-coast. You may even pick up some ideas for additional activities in your Centre.

This year we welcomed the 21st Centre: Thunder Bay was recognised by National Council in September. I had the very good fortune to be in Thunder Bay on a weekend in mid-October, and the other business which took me there finished early. Thus, I was able to take up the generous invitation, extended by their president, Bob Bishop, to meet the members of our newest Centre at brunch in a local hotel. There was a large turnout, very keen to learn more about the Society and its relationship to their Centre. They had a large proportion of active observers, perhaps because of their clear skies, unpolluted by the light which afflicts most of the communities in which our Centres are located. They seem poised for growth and I wish them all the best.

On the National scene, we now have nine Centres, six Officers and an assortment of others who can communicate electronically with each other and with National Office (RASC@UTORPHYS) via the NetNorth (BITNET) computer network. In most cases this can be done at no cost and, if your Centre does not have a connection, I encourage you to investigate the possibility. University computers have connections to NetNorth, and so all that needs to be done is to find someone in your Centre who has an account on a university computer and is willing to send and receive electronic mail on the Centre's behalf.

It is pleasing to see that we have almost retained the record numbers recorded in the Halley year (1986) in which we added well over 600 members to our roll. The membership figures as of September 30, 1988 are compared with those of the previous year in the following summary (the total reported in 1985 was 2914; and in 1986 it was 3564):

	1987	1988
Calgary	242	213
Edmonton	115	136
Halifax	145	138
Hamilton	84	86
Kingston	46	35
Kit-Waterloo	29	32
London	46	43
Centre Français de Montréal	39	43
Montreal	111	103
Niagara	48	64
Ottawa	241	228
Quebec	74	60
St. John's	22	19
Sarnia	11	8
Saskatoon	41	45
Thunder Bay	—	—
Toronto	1035	1052
Vancouver	147	167
Victoria	143	135
Windsor	48	49
Winnipeg	61	60
Unattached to Centres		
Canada	318	301
United States	369	306
Overseas	57	62
Honorary	13	14
	<hr/>	<hr/>
	3534	3399

Unfortunately, responses to requests from National Office are not often made in a timely fashion: for example, only eight Centre reports were received by the deadline. I am sure that the majority would be on time if they were aware of the hardship which this causes, particularly to our Executive Secretary, Rosemary Freeman. May I assure you that the deadlines which are set in communications from National Office are not arbitrary, but are based on realistic estimates of the latest time by which the responses can be properly dealt with. It also appears that communication within Centres, between those who receive the mail and those who reply to it, could be improved in many cases. Please help Rosemary and myself to serve you better by treating our deadlines with respect. For my part I will help you to do this in any way I can: for example, I intend to re-write the documents "The National Office and the Centres" and "The Society Month by Month", which are now rather out of date. Obviously, this project will have to await approval of the new Constitution, which will hopefully occur at the General Assembly this July.

Once again, it is my pleasure to record the Society's appreciation of the work performed by all those hard-working members of committees who work behind the scenes to help make the Society function. Of course, our Executive Secretary, Rosemary Freeman, again deserves our thanks for continuing to keep the society running so smoothly, in spite of the wrenches we all throw in from time to time.

DAVID A. TINDALL, *National Secretary*

CALGARY CENTRE

January	Orla Aaquist: "Planetary nebulae"
February	Jack Penfold: "Using the Astronomy Videodisk"
March	Myra Rutkowski: "Women in Space"
April	Sun Kwok: "Future of Space Astronomy in Canada"
May	Don Hladiuk: "Terrestrial Impacts"
June	Open House at the Wilson Coulee Observatory
September	Andrew Lowe: "The March 1988 Solar Eclipse viewed from the Philippines"
October	Daniel Johnson: "Supercomputing in Astronomy"
November	Joel Powell: "NASA's new start in space science"
December	Russ Taylor: "Jets in the Universe"

Volunteers from the Calgary Centre organized a Mars observing programme in the fall. It was initiated and funded by the Alberta Science Centre, and contracted out to Calgary Centre with original funding from the federal government. Six communities in southern Alberta were visited for a weekend each. The programme yielded one of the best star nights ever in Fish Creek Provincial Park in south Calgary on October 22.

Centre members Don Hladiuk and Bill Krosney are instructing one of the best attended introductory astronomy courses for the general public in the city. Sponsored by the Department of Continuing Education, the course has been running for several years.

The Calgary Centre is acting as facilitator to have astronomy reintroduced as a curriculum subject in Calgary schools. The University of Calgary, the Alberta Science Centre, Mount Royal College, and the Regional Science Councils of the Calgary Board of Education are instigating a teachers workshop on astronomy in the classroom. A meeting was held in the fall with planning meetings scheduled for late January with the object of presenting a first workshop to the teachers in May 1989.

A light pollution public awareness campaign was initiated on International Astronomy Day with a handout and a photographic display. This program was continued at the several community star parties held in the fall. Light Pollution committees chairperson Ruth Lewis has joined the International Dark Sky Association (IDA) based in Arizona and recommends support through membership for anyone concerned about light pollution.

John Howell, one of the founding members of the Calgary Centre in the late 1950s and now active with the Victoria Centre, has donated a 16" reflector to the Centre. Plans are underway to install it in the Wilson Coulee Observatory which currently houses a 12.5" reflector.

DANIEL JOHNSON, *Secretary*

HALIFAX CENTRE

Meetings of the Halifax Centre, held monthly (except during the summer) at the Nova Scotia Museum, were again well attended in 1988, given that many of our members do not live near Metro. Centre President Darrin Parker co-ordinated an interesting variety of presentations and events for the year. Supplemental meetings were also conducted by a few members of the executive, aimed at beginners and new members. These were held in conjunction with informal shows at the Halifax Planetarium.

Although regularly scheduled observing sessions have been discontinued you can still see a dedicated core of observers at the Beaverbank site on any clear, moonless night. In addition there are members who do their viewing from various dark sky locations around the province. Some viewing sessions were held for the public from the museum parking lot and the regular observing site, and a public session held near Bridgewater (N.S.) in August was well attended. A planned Messier Marathon was clouded out for most of us, although Larry Bogan did manage to bag 103 Messiers on March 19-20 before morning twilight halted his efforts.

The observing highlight of the year was the Nova East '88 "star party" at Fundy National Park (New Brunswick) during the weekend of August 12-15. Coordinated jointly by the Halifax Centre and the Saint John Astronomical Club, the public presentations and observing sessions were extremely well attended and thoroughly enjoyed by people from the Maritimes, Quebec, Maine, New Jersey and Bermuda. Many thanks go to Observing Chairman Mary Lou Whitehorne for her hard work in organizing this very successful event. It seems that Nova East will become a permanent fixture in recreational astronomy in the Maritimes.

In our association with other astronomy clubs, the Centre received an invitation to affiliate with the Barbados Astronomical Society. This followed the visit of one of our members to their country, and it should be interesting to see what comes out of further correspondence. Closer to home, the Saint John Astronomical Club continues to communicate regularly with our Centre concerning events and shared interests. In May the Centre hosted a weekend of talks, planetarium shows and an observing session for an enthusiastic group of students from the Hebron Astronomical Club of Yarmouth Co. (Nova Scotia).

A new position of second vice-president was added to the executive this past year to help redistribute some of the duties held formerly by the other executive positions. Among the list of issues discussed by the executive was the prospect of building an observatory. Following the results of a survey conducted by Doug Pitcairn, in which a moderate majority were in favour of an observatory, it was recommended that a committee be formed to tackle the problems of funding, site proximity, construction and choice of telescope. The main stumbling blocks at this time are where to obtain land and how to ensure adequate security of a remote site.

The Halifax Centre prospered financially in 1988, due in large part to continued healthy Handbook sales (almost 200). Miscellaneous sources of revenue resulted from Book and Junk sales held after meetings, and from the sale of pins, crests, hats, bumper stickers and T-shirts (including Nova East paraphernalia). Credit (?) goes to Joe Yurchesyn for his detailed financial statements, which were thoroughly enjoyed at executive meetings. (Any plans for Rio, Joe?)

The newsletter "Nova Notes" is still one of the best anywhere, and we are grateful to Pat Kelly for his outstanding efforts. Congratulations also go to Roy Bishop for being awarded the Service Award at the General Assembly in Victoria. And finally, we hope to see many of you at this year's G.A. in Cape Breton.

January	"The Dominion Observatory" by National President Mary Grey
February	"Globular Clusters" by Dr. Cameron Reed (Saint Mary's University)
March	"Palomar" by Joe Yurchesyn
April	"The Age of the Universe" by Dr. Mario Pedreros (Saint Mary's University)
May	Annual banquet at "Chinatown" Talk on early astronomical instruments by Randall Brooks Burke-Gaffney Award presented to Dan Falk for his paper on spectroscopy.
June	Popular "Members Night"
July/August	Nova East '88
September	"G.A. Report" by National Representative Wilf Morley; "Nova East" report by Mary Lou Whitehorne.

- October Our Astronomy Day – general talks on “RASC”, “Telescopes”, “Mars 88”, “Distance Scale” RASC display at Bayers Road Shopping Centre (a success thanks to the members who volunteered their efforts).
- November “Kennedy Space Centre” by Darrin Parker.
- December Various topics for beginners.

PAUL DUVAL, *Secretary*

HAMILTON CENTRE

There were ten general meetings of the Hamilton Centre this past year. The speakers and their topics were:

- January Annual meeting: Jim Winger: “Amateur Astronomy in Australia,” Clive Gibbons and Barry Sherman: “A Pictorial Report of the Growth of the Hamilton Centre.”
- February Eric Golding: “Construction of a Home-Built Filar Micrometer.” Ian Stuart: “Saturn’s Rings.” and Clive Gibbons: “Basic Observing Equipment.”
- March Ian McGregor: “The History of Astronomy versus Astrology.” Robin Allen: “The Centre’s Activities of the Past Thirty Years.”
- April Dr. Peter Sutherland: “Current Research on SN 1987A.” Mike DeVillaer: “The Good, the Bad and the Obscure.”
- May Peter Jedicke: “Recipe for a Star.”
- June Dr. Christine Clement: “RR Lyrae Stars and Globular Clusters.” Peter McSweeney: “Binary Stars.” Douglas Monk: “Historical Astronomical Sites in Mexico.”
- September Dr. R. Carlburg: “Evolution of Galaxies.” Karyn Bennett: “Activities at Star Fest.” Mike DeVillaer: “Mars – Pictorially.”
- October Dr. William Harris: “The Virgo Cluster and the Age of the Universe.” Barry Sherman: “Cleaning and Collimating Optics.”
- November Robert Jedicke: “Neutrinos and Supernovae.” Mike DeVillaer: “A Trip Through the Universe.”
- December Dr. Robert Garrison: “Small ‘Scopes, – Big Discoveries.” Barry Sherman: “Relative Merits of Various Telescopes.”

We offer our congratulations to Toni Quinn, the Hamilton Centre’s first female President, on the completion of a most successful year. Her effective leadership and her diplomatic guidance were greatly admired and appreciated.

The February issue marked the twentieth anniversary of the Centre’s newsletter ORBIT. Expertly edited again this year by Karyn Bennett and her steadfast ORBIT crew, the six original aims of the publication as listed by its founding editor Ken Chilton, are still being faithfully fulfilled in all ten issues. Karyn also found time to organize a garage sale in June to assist with the Centre’s fund-raising. We extend special thanks to Linda McCrory, Peter McSweeney, Ian Stuart and Derek Baker, for their assistance with the sale.

Thanks largely to the effective presentation of Ian Stuart, and the subsequent co-operation of Flamborough Council, the streetlight problem has been tamed in the form of a special hood which now directs the offending glare downward.

John Gauvreau reports a very busy and successful year for Public Education, with more than 1000 members of the public hosted at the Observatory. Special thanks are extended to those who assisted. Ian Stuart, Peter McSweeney, Pauline Wright, Barry Sherman and Richard Petrone, with additional special thanks to Stan Bryant who planned the bookings and managed ticket distribution.

The members of the Hamilton Centre enjoyed an eventful summer. Many took part in the trips to the McLaughlin Planetarium, the David Dunlap Observatory, the NFCAA Summer Seminar at Syracuse, and Star-Fest at River Place. Both Barry Sherman and Mike Jefferson gave presentations at Star-Fest which were well received. Also, four intrepid members, Sean Carey, Bruce Collier, Richard Petrone and John Gauvreau sought most successfully to raise funds for the Centre by staging a round-trip Bike-a-thon to

Star-Fest. The bikers were well organised, with CHCH-TV televising the send-off from inside the dome of the Marsh Building. The broadcast was reported to have reached as far as Fort Nelson, B.C.

Eric Orr was presented with the Service Award at the G.A. in Victoria; congratulations Eric, you richly deserved it. John Gauvreau was awarded the Centre's Fautley Award for his contribution through the Public Education programme, and Karyn Bennett received the newly-instituted Craig Award for her contribution to ORBIT. The Craig Award was named in honour of Gordon Craig, a long time and well respected member of the Hamilton Centre, who passed away earlier this year.

Bob Speck, our Observing Director, reports that 1988 was an exciting year for observers in the Hamilton Centre. With Mars at opposition in September many fine observations and photos were made. Jupiter and Saturn also provided many hours of enjoyment. The Centre held eleven Observer's Group meetings at the observatory, with four being clouded out. Members' slides were shown on those occasions.

Curator and Maintenance Director, Barry Sherman reports that repairs to the dome have been completed and the 17.5" scope, among others, has been kept busy this year. Barry's planning and expertise has provided the Observatory with a new 10" f/6 reflector in the Chilton Building, and a solar filter for use on the 5" refractors. Thanks are extended to Mike Jefferson, Dave Burbage, Bert Rhebergen and all others who helped with the difficult job of maintaining the grounds and buildings this past year.

Several additions to the Library's collection, a taped message to the public on the telephone answering machine, and wiring into the Chilton Building are also among the improvements at the Observatory.

The loss of a dear friend and a very special person numbed the Centre at the close of this year. Ian Stuart died on December 18th after a lengthy illness, and his loss will be long felt in the Hamilton Centre. For many years Ian's presence had unified the Hamilton Centre with his wit and strength of character. Our sorrow at his loss is as great as the joy of having known him.

ERIC GOLDING, *Secretary*

KINGSTON CENTRE

This past year has been an interesting one for the members of the Kingston Centre. At our first meeting of 1988 Leo Enright, the longest standing member of the Kingston Centre, showed us his astronomical almanac and a collection of excellent quality astrophotography slides of the sun, moon, galaxies, nebulae and star clusters. Our February meeting was cancelled due to poor weather conditions, but March brought a presentation from Effie Ginsburg on the NetNorth Communication System and a demonstration of an Astro-Soft program called "Star Find", which allows the user to find planet-satellite positions, planet data, and has a perpetual calendar included. A mere eight days after our March meeting David Levy, a well-known amateur astronomer and honorary vice-president of our Centre, discovered his fifth comet. Comet Levy 1988e was discovered on March 19th. In honour of this and other accomplishments an asteroid was given the name Asteroid Levy #3673.

April brought a very informative talk on light pollution from Tom Dey of the Rochester Astronomical Society, and a slide show of his own astrophotographs, second to none. April 23rd was International Astronomy Day and our Centre participated at one of our local malls with a high quality display of telescopes, slides, and photographs, which the general public found interesting. Our speaker for the May meeting was Dr. Victor Hughes of Queen's University, who spoke on the topic of star formation, and showed overheads and slides of his work showing new stars forming within a very short time, in the region of Cepheus "A". Leo Enright spoke to us again in June and showed us some new astronomical publications and also a set of slides he had purchased from the Astronomical Society of the Pacific. He also included some excellent shots of his own of Comet Bradfield, Comet Borelly, and several constellations.

On July 2nd we were saddened by the passing of Dr. A. Vibert Douglas, founder and honorary president for 25 years of the R.A.S.C. The July meeting brought to us Terence Dickinson, noted amateur astronomer and author. He showed us 30 slides of his recent work including Moon/Jupiter conjunctions, Moon shots and constellations. August saw 14 members gather at Fairfield Park west of Kingston for the 2nd annual R.A.S.C. picnic and we enjoyed a fellowship along with the highlights of the evening – a tour through a turn of the 17th century United Empire Loyalist homestead. We heard from several members in September

telling us of summer observing activities. Mrs. Hicks, our president, showed us some of Jack Newton's astro slides brought back from the General Assembly in Victoria, B.C. in July. Mr. Kashijap told us about the origins of the names of the days of the week.

John W. Griese' III, a well known variable star observer and recent new member to our Centre spoke to us in October. He has considerable experience in variable star observing and has done much work in observing cataclysmic stars such as S.S. Cygni. November came and so did Walter MacDonald. His presentations were numerous slides and a very detailed account of the construction of his observatory on the family farm. He provided us with an overall picture of what the amateur can build with a little patience and a lot of hard work. The annual dinner and meeting took place in December with elections of officers for 1989, and reports from executive members were read.

As we close this year I think it's very fitting to recognize a long standing member of our society, Mr. Hein vanAsperen. Please note that as you pick up your Observer's Handbook for this year, the front cover photo you will see was taken by Hein. Our congratulations!

ELDON ADAMS, *Secretary*

KITCHENER-WATERLOO CENTRE

1988 was one of the most active years for the Kitchener-Waterloo Centre in recent memory. In addition to a healthy rise in membership, the past year saw the Centre involved in a number of public events.

On March 30, Paul Bigelow hosted a star night for the Kitchener-Waterloo Field Naturalists. Since the first of these events was held in 1987, they have become a regular part of the Centre's activities.

The Centre celebrated the April 23 International Astronomy Day with a display at a local mall. A small but enthusiastic group attended a public star night at Breithaup Park the following evening.

On June 18 there was a good turnout for the annual picnic at Ayr. Before the observing session, a volunteer crew made repairs and cleaned up the observatory and its surrounding site.

With the summer break came the traditional journey to Star-Fest in August. New this year, however, was the establishment of a regular series of star nights for centre members. Paul Bigelow decided to draft a star night schedule after reading of a similar practice at the Niagara Centre.

A small group organized a carpool for a September 10 visit to the David Dunlap Observatory. Later in the month, our Centre participated in the Midwestern Ontario Hobby Show at the Kitchener Memorial Auditorium. A long line-up of visitors was treated to a view of Mars through Rob Menzies' 8-inch Schmidt-Cassegrain.

Throughout the year, Herb and Dave Schilling, Alan Paeth, Mike Gore, and others researched and carried out renovations to the 12.5" reflector of Ayr. In addition to making some much needed repairs, a new secondary mirror was purchased. Further renovations are planned for 1989, including the addition of a stepping motor.

To close off what had been a busy but rewarding year, the annual Christmas dinner was held on December 16 at a local restaurant. Afterwards, several members went to Ray Koenig's house for astronomy videos and computer games.

What follows is a summary of the Centre's meetings throughout 1988. Meetings are held the second Tuesday of every month, except July and August, at the Wilfrid Laurier University Arts Building.

Thanks to all who made the past year so successful. Clear skies in '89!

January	Annual Election, Ray Koenig: "Observing for Beginners"
February	Mike Gore: "Charge-Coupled Devices"
March	Peter Daniel: "Solid Surfaces of the Solar System"
April	Alan Paeth: "Digital Image Processing"
May	Ray Koenig: "Cosmology #2"
June	Peter Daniel: "Observing Mars this Year"
September	Peter Daniel: "Californian Observatories"
October	Video on Voyager missions

- November Alan Paeth & Mike Gore: "Automation of Our Centre's Telescope"
 December Paul Bigelow: "Reading Sky Atlases and Charts"

JONATHAN DOUPE, *Secretary*

LONDON CENTRE

The London Centre has enjoyed a particularly active and progressive year. Monthly meetings, held in the Medical Science Building of the University of Western Ontario, have been well attended. Innovative programs epitomized by a good choice of speakers and the introduction of a series of Members' Nights have helped to develop a keen interest in the club's activities; the latter exercise enables each and every member to participate and to contribute to the programs. They can show off their astrophotographic endeavours, describe a particular project of their own, or participate directly in the Centre's plans and decisions.

Early in the year the Centre purchased an Odyssey-8 telescope which is available to all members. At the request of our Observers Group several members have contributed spare accessories for the instrument, thus augmenting its capabilities.

The steady expansion of our fair city has inevitably encroached upon previously ideal observing sites, and consequently the Centre has had to look about for alternative locations. A new site was eventually found just east of the city and has been in constant use. Our very active Observers Group has made good use of the new telescope and site, and as well has organized excursions to Stellafane, Star-Fest 88, the Ontario Science Centre and the Planetarium, the NFCAAA Summer Seminar in Syracuse, N.Y., and several camping/observing trips to various sites around the province. Four members of the Centre journeyed to Victoria, B.C., in the latter part of June to attend the General Assembly of the RASC.

Several of our members carried the gospel of astronomy to the general public in the form of star nights and informal talks with school children, Cubs and Guides. During the year we enjoyed a number of excellent lectures by selected guest speakers and some of our own members, as follows:

- January Mike Watson described his solar eclipse experiences and gave a slide presentation on "South of Capricorn".
 March Robert Jedicke: "Neutrino Astronomy".
 March Annual Banquet. Dr. William Fyfe (Dean of Science at U.W.O.): "Man's Impact on Earth".
 April Mark Sinkins: "Astrophotography—what NOT to do"
 May Dr. Patrick Mann, (U.W.O. Astronomy Dept.): "Black Holes".
 June Peter Jedicke: "Recipe for a Star".
 September Mike Scott: "Mars in 1988".
 October Eric Clinton: "The World of Small Telescopes"; and Frank Lochner with a C.A.T. demonstration.
 December Paul Brown: "Deep-Sky Observing".

Special recognition was paid to several Centre members for individual achievements. Michael Flegel and John Rousom were granted Messier Certificates; Dale Armstrong and Mark Sinkins received Membership Certificates; and Jim Lucyk earned the London Centre Merit Award.

The whole year's programme was knitted together by an excellent monthly journal, *Astronomy London*, ably edited by Eric Clinton.

Plans are already afoot to make 1989 a banner year. A host of prominent speakers is being engaged, more Members' Nights are planned, a motorcade is being organized to take some members to the Texas Star Party in May, and preparations are being made to greet Pluto's first perihelion in nearly 250 years.

GRANT CARSCALLEN, *Secretary*

CENTRE FRANÇAIS DE MONTREAL

En 1988 notre Centre a continué d'évolué en tant que section de la Société d'Astronomie de Montréal. Nous avons 40 membres en règles, dont un junior.

La Société a organisée plus de quarante réunions au cours de l'année et nous avons reçu comme conférencier Pierre Lacombe du Planétarium de Montréal, les astronomes; Gilles Fontaine, François Wessemael, Gilles Beaudet, Jean-Louis Tassoul, Serge Demers, Claude Carignan et Pierre Bastien, tous de l'Université de Montréal. Nous avons aussi reçu Thiéry Montmerle du CNRS de Paris. Les autres réunions ont été animées par des causeries faites par des amateurs.

A la bibliothèque plus de 300 volumes et revues ont été prêtés. Le comptoire de la Société à continuer de pourvoir au besoin des constructeurs de télescope et M. Gilbert Ouellette a continué d'aider ceux qui en avaient besoin à polir leur miroir. Nous avons tenu le Concours Annuelle de Fabricants de Télescopes Amateurs (CAFTA) les 20 et 21 août. Coté exposition nous avons été présent à la journée internationale de l'astronomie au Planétarium de Montréal, au congrès de l'AGAA, à l'Expo-Sciences Pan-Québécoise, au Salon des Aînés et à d'autres activités mineures.

L'observatoire a reçu 24 visites totalisant environ 75 personnes de mai à novembre. De plus en plus d'observation y sont faites par les membres. Un manuel d'observation de Mars a été préparé par Marc Gélinas et distribué aux observateurs intéressés. Trois Bulletins de nouvelles de la Société ont été édités durant l'année et nous avons continué d'être présent au Québec-Astronomie.

MARC A. GÉLINAS, *secrétaire*

MONTREAL CENTRE

1988 marked the seventieth year of existence of the Montreal Centre along with various events from renovations to celebrations and from observational activities to photo contests.

Our lecture coordinator, Mr. Jimmy Letorneau, put once again considerable effort into scheduling formal lectures at the Dow Planetarium. Dr. John Glaspey of the University of Montreal presented a talk on "Binary Stars" on March 14th and Mr. Laurent Grisson, also from the University of Montreal, spoke on "Giant H-II Regions" on April 11th.

Mr. Jimmy Letorneau visited the Kennedy Space Center in Florida in May. He had the opportunity to speak to some of the NASA personnel and reported his experiences in the August issue of our newsletter: "SKYWARD".

The Dow Planetarium was closed for renovations from August 15 to November 1. Consequently, further lectures will only resume in the new year.

The regularity of the Saturday evening talks in the Centre suffered from the departure of Dennis Ryan, who was the organizer and moderator of these talks and whose untiring effort and enthusiasm was hard to replace in this area, as well as in the editing of SKYWARD. However, we had some outstanding Saturday Night talks. Dennis Ryan, Bill Strople, Bert Widdop, Louis Bernstein, Mario Caluori were some of the speakers.

Mr. David Levy, the famed comet discoverer, gave a fascinating talk on his observational and discovering experiences on the occasion of the Centre's 70th birthday celebration, on September 14. In December, Dr. Lloyd Higgs, our National President, gave an excellent presentation with slides on the Dominion Radio Astrophysical Observatory.

Throughout the year with Mars' favourable perihelic opposition and Jupiter's equally favourable opposition, interest in observing and photographing the night sky was high.

The photo contest, organized by our past president, Mr. Ron Pow, was followed by Mario Caluori's course in astrophotography. Mr. Caluori also worked out the exposure times for planetary photographs taken through our C14 telescope at various magnifications. His calculations proved to be extremely accurate.

Our observing site at Cedar Crest, 70 miles from Montreal, was used several times by various members and we were successful in establishing another excellent site in the Mount Tremblant area.

Stellafane was attended by quite a few of our members who enjoyed attending presentations, taking heliostatic and other photographs and meeting with Dr. Clyde W. Tombaugh, discoverer of the planet PLUTO.

Mr. Stewart Marshall was our official representative at the General Assembly, Victoria, B.C. and at the National Council meetings at Toronto. Mr. Marshall was also this year's recipient of the Charles Good Award for his various contributions to our Centre.

September and October were busy months preparing for our Fall season and for our 70th anniversary. Stewart Marshall, David Brown, Louis Bernstein, Mario Caluori, Gordon Lorimer, Fred Clarke and others put in endless hours to complete renovations, repairs and improvements to the building and to the telescope pier.

Mr. Bert Widdop cleaned and overhauled the C14 and Mr. Lorimer designed a latitude adjuster and a new base. A skylight 1A filter, donated by Ron Pow, was installed and Mr. Widdop also supplied a desicator for the C14.

Our 70th birthday party on September 10, organized by Louis Bernstein, will be long remembered. More than seventy people showed up. Mr. Stewart Marshall gave a brief talk on the history of the Montreal Centre. Miss Isabel K. Williamson was among the visitors; the Montreal Centre named its Observatory in Miss Williamson's honour last year.

On September 24th, one hundred and fifty visitors "invaded" the Centre, as the result of a media publicity campaign on the opposition of Mars, and they kept Bill Strople, our Director of the Observatory, busy for hours.

The Montreal Centre also had to face losses this year. We lost some very active participants for various reasons. Mr. Dennis Ryan moved to Newfoundland with his wife, Pauline. Dr. John Glaspey took up a post as a Resident Astronomer in Hawaii.

Mrs. Elizabeth R. Pride while continuing as a member, has resigned as secretary. She is a past recipient of the Charles Good Award for her multifaceted contributions to the Centre.

In October we lost our president, Mr. Calman Woolf "Bill" Cadloff, who passed away after a short illness. Mr. Cadloff was an outstanding human being, enthusiastic and involved in all activities and always considerate and helpful. He will be sadly missed by all of us.

The Annual Meeting was held on November 23 at which a new Board was elected. Shortly after, Mr. Mario Caluori, our new president (second time around) introduced a new "Master Plan" which seems to be a very ambitious perspective for the activities of the coming year.

Our calendar year was concluded by a very enjoyable Christmas party on December 10th at our Observatory. Although our own Santa, impersonated amazingly by Steve Cekovic, had some trouble in landing on "that ROUND THING", he finally succeeded closing the year with good cheers and lots of laughter.

MARITZA BERGER, *Secretary*

NIAGARA CENTRE

All meetings were held in the Niagara Falls, Ontario, Centennial Library, LaMarsh Room.

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| January | Annual meeting; election of Directors, reports of officers.
Robert Jedicke, "The birth of Neutrino Astronomy." |
| February | Roland Rupp, "Extra Terrestrials." |
| March | Norman Green, "Men in the Moon." |
| April | Andreas Gada, "Star-Fest '88 and the North York Astronomical Society." |
| May | Dr. Bill Harris "Star Clusters and the Age of the Universe." |
| September | Members' night; report on Star-Fest '88 by Bob Winder and others. |
| October | Dr. Lyle Bororst "The discovery of Pluto." |
| November | NFCAAA/Niagara Centre Fall Banquet at the Queenston Heights Restaurant.
Dr. Robert Garrison "Small Telescopes and big discoveries." |

November Bob Winder "A photographic history of the Son of Lurch" (his 26-inch telescope). Also, the draw for the winners of our raffle for the benefit of the Al Kindy Memorial Observatory Building fund.

In 1958 the Greater Niagara Astronomical Society was formed, which later became the Niagara Centre of the R.A.S.C. The September 1988 issue of the *Niagara Whirlpool* was a special commemorative issue, celebrating 30 years of amateur Astronomy in the Niagara Peninsula.

As well, our newsletter editor Michael Ilnicki put together a collection of articles, photographs and newspaper clippings for the archives of the Centre, giving a detailed history of the Centre, and containing articles by longtime members (and some not-so-long ones) about their experiences as members of the Centre.

This year brought us close to the end of our efforts to find a location for a permanent Observatory. Final discussions are to be held in January 1989 and by the time this report is printed in the R.A.S.C. Annual Report 1988 we should know where and when we can start building!

After a successful garage sale in 1987 we discussed and executed several fundraising schemes, one of which was the raffle held at the November meeting.

Successful observing nights have been few and far between; the weather has not been very cooperative. January was best, with 2 very good evenings. Next was April (1 eve.), May (2 eve.) and June (1 eve.). The rest were clouded out.

Fortunately, the summer's Public Star Nights fared much better: four out of five had good weather and good attendance.

On September 28, the Centre assisted, as usual in the fall, Dr. John Black of Brock University, by supplying telescopes and operators at a Star Night for his Astronomy class. Since the date was set as the first clear night after Sept. 25, three members showed up on Sept. 26, but Dr. Black had decided it was not clear enough, and no class showed up. The clouds moved in by 2100 h, but stayed away 2 days later. Oh, well.....

WALTER JUTTING, *Secretary*

OTTAWA CENTRE

Public Meetings: The Council sponsored several Centre meetings during the year: In January, member Dr. David Goodenough of the Canada Centre for Remote Sensing gave a talk on the kinds of important information obtainable from remote sensing satellites. In February, member Ms. Mary Grey, R.A.S.C. National President and Curator of Astronomy at the National Museum of Science and Technology gave an insightful look into the founding and early years of the Dominion Observatory. In April, Dr. B. Ralph Chou, President of the Toronto Centre, gave an informative talk on eye protection for the solar observer.

Council: This year was of significant importance to the Ottawa Centre in several areas and Council met five times. The Ottawa Centre won the privilege of hosting the 1990 General Assembly. Planning is already underway for this event which will coincide with the Centenary of the R.A.S.C.

This year there was much discussion of the new National Constitution. After this document is adopted the Ottawa Centre will be in a position to evaluate the Centre Constitution. Council started the operation of an Equipment Loan Library, adopted a public relations policy and continued work on a Procedures Manual. Council entered into a 10 year lease agreement with the Mississippi Valley Conservation Authority (MVCA) to allow the continued use of the site at Indian River Observatory (IRO).

The year ended with the Annual Dinner Meeting where Dr. John Percy, of the Department of Astronomy at the University of Toronto and First Vice-President of the American Association of Variable Star Observers (AAVSO) gave a very informative and enjoyable talk.

Astronotes continued in the fine tradition of excellent articles under the editorship of Doug George. New to members in 1988 was an information sheet outlining various meetings, publications, observatory facilities and upcoming events.

Observers' Group: The Observers' Group conducted well attended meetings each month through 1988

under the dedicated guidance of Chairperson Sandra Ferguson. Thanks are due to the NRC for allowing use of the meeting rooms.

In March the annual Messier Marathon was organized by Doug George. International Astronomy Day saw a number of members manning display tables at a mall in Kanata. Public interest was good even though rain prevented observing. On July 24th, Dr. Vic Gaizauskas of the National Research Council conducted a tour of the Solar Telescope at Shirley's Bay where members saw sunspots through several filters.

Our second annual campout at Lac Philipe, planned by Rick Crook and David Monogian, coincided with the Perseid meteor shower. The NCC provided an area in exchange for a slide presentation and starnight for campers in the Gatineau Park. Max Stuart, Roseanne and Gary Mussar and Daniel Rollin provided telescopes and slides but the weather did not cooperate. The Perseids were observed by Rick and Doug George at IRO the previous day. Several members gave interviews on CBC Radio for interviews for both this shower and the Geminids in December.

A successful public starnight was held in a city area park in September to observe Mars. Also the Ottawa Centre set up display tables in the Gatineau Park as part of the NCC's "Fall Rhapsody" program. The weather was glorious and hundreds of hikers and bikers dropped by to view sunspots through a solar telescope.

Indian River Observatory: A new class of keyholder was created. The main advantage of the new system is that it permits members to use their own equipment at the site and still have access to the clubhouse to warm up and to use its reference material. No test is required since the basic keyholder is not permitted to use the 10" and 16" telescopes.

A major up-grading of the 10" telescope has been undertaken in order to make it suitable for astrophotography. A number of other improvements including the installation of a reel-to-reel tape recorder and a permanent CHU radio and antenna have either been completed or are underway.

After considerable improvements to the radio telescope in 1987 by Ken Tapping and Frank Roy some new observing programs were started. The principal program is a three year project to map the sky at 238 MHz. Computers will be used to produce a contour map and a discrete source map. Also underway is a project to detect radio pulsars.

In spite of all these improvements, the large number of keyholders, and the completion of the new access road in September 1987, the use of the IRO was about 30% lower than in 1987. A major factor has been the weather. The greatest declines in Observatory visits were recorded in the months of January, February, August, and October.

DEREK R. MACLEOD, *Secretary*

CENTRE DE QUÉBEC

Le Centre de Québec accueillait les 17, 18 et 19 juin le congrès provincial d'astronomie. Une centaine de participants eurent l'occasion de visiter la section d'astronomie et de géologie du Centre Muséographique de l'Université Laval ainsi que le miroir liquide de Dr. Hermano Borra. Le conférencier invité était Dr. Gilles Fontaine de l'Université de Montréal qui traita de l'Age de l'univers. Les congressistes eurent droit à deux nuits parfaites pour l'observation avec un choix de trois observatoires, soit celui du Collège de Lévis-Lauzon, doté d'un C-14, celui du Collège de Lévis à St-Nérée, doté aussi d'un C-14 et celui de St-Luc regroupant un 12", un 10" et un instrument de 16" attendant son miroir.

En juillet, le Festival du Mont-Mégantic attira bien des gens désireux d'observer à l'aide du télescope de 1.6 mètre. Jean-Marie Fréchette y présenta un atelier sur l'almanach graphique et un autre sur l'observation du soleil. Denis Martel y exposa son projet d'observatoire.

A l'occasion des Perséides, le Centre de Québec était pour la première fois cette année l'invité du Parc de la Jacques-Cartier pour y animer une fin de semaine thématique sur cette pluie de météores. Le ciel fut heureusement dégagé et permit aux quelques centaines de personnes présentes d'observer les étoiles filantes et aussi d'autres objets célestes grâce aux télescopes des membres participants. Des causeries furent aussi offertes en après-midi et en début de soirée. Le kiosque présentait des photos et des dessins mais surtout un exhibit de météorites obtenu de la Commission de géologie du Canada.

Les activités régulières d'observation, les samedis et dimanches où le ciel était dégagé, eurent lieu à l'observatoire de St-Nérée. Il est remarquable que nos plus jeunes membres soient les observateurs les plus actifs.

Le programme de conférences présenta les sujets suivants:

- janvier Pierre Bouliane: Le parfait bricoleur en astronomie.
- février Dr Pierre Mathieu: La théorie des cordes et supercordes.
- mars Mario Lapointe: La micro-informatique en astronomie d'amateur.
- avril Edouard Boily: La réalisation d'un miroir liquide.
- septembre Denis Martel: La planète Mars.
- novembre Pierre Bouliane: Un observatoire pour un 14.5".
- décembre Dr Raphaël Sanchez: Les applications de l'astronomie en géodésie.

Enfin l'almanach graphique 1989, doté d'une subvention de la S.R.A.C., a été produit une autre fois avec la collaboration personnelle de Dr. Paul Marmet de l'Institut Herzberg d'astrophysique. Il a déjà connu une diffusion provinciale en page centrale du numéro de nov-déc 88 de la revue LE QUEBEC ASTRONOMIQUE publiée par l'A.G.A.A. Il est toujours à la disposition gratuite de ceux qui en font la demande au Centre de Québec qui sera heureux de constater que son travail est apprécié. Adressez vos demandes à C.P. 9396, Sainte-Foy, P.Q. G1V 4B5.

YVON LABADIE, *secrétaire*

SARNIA CENTRE

The Sarnia Centre held seven regular meetings in 1988. On April 29, the Centre held its first meeting at the new location of the Town of Clearwater municipal buildings. This meeting room while most notably being free of charge, also provides excellent audio/visual equipment, and kitchen facilities to better accommodate our group.

Observational nights were conducted by the group in an informal manner, usually at a member's home. Our Centre was ably represented at Star-Fest (Mt. Forest), the Eagle observing site (West Lorne) of the Essex Wayne Observers and especially the excellent presentation of Clyde Tombough.

The Sarnia Centre is particularly concerned with declining membership. We are pursuing vigorously a membership drive to boost our numbers and increase the viability of this Centre.

The Sarnia Centre has a new meeting place, fresh ideas and is looking forward to a rewarding 1989.

REG C. McMICHAEL, P.ENG, *Secretary*

THUNDER BAY CENTRE

- January 21 to March 3. Course – "Astronomy, Telescopes and Cameras" – For anyone who had taken "Backyard Astronomy", limit of 15, enrolled 12.
 - June Meeting to plan for the summer activities, 28 attended.
 - July 1, 2, 3 Star party at Sibley Prov. Park, 5 telescopes and many with binoculars, from 10 p.m. to 1:30 a.m., many club members and 75 or 80 campers.
 - August 21 Star party at Sibley, 2 telescopes and about 40 campers had fun with Saturn, Sagittarius and a brilliant display of Aurora in the west-north-west.
 - September 22 Backyard astronomy #3, a full registration of 30, 3 weeks before registration ended.
 - September 13, 14 and September 19, 20, 21 – Star nights for Mars.
- At the September meeting of the National Council in Toronto a motion was passed which approved the formation of "The Thunder Bay Centre".

- October 16 Meeting with David Tindall, National Secretary, at the Airline Motor Hotel to discuss the formation and direction of our new organization; Sunday brunch – 16 members attended.
- October 23 The inaugural meeting of the “Thunder Bay Centre” was held at the President’s home; a group photo of the founding members was taken.
- November 10 A general meeting was held to discuss winter activities, with over 30 people in attendance. The first newsletter, produced by Annette Clements, was circulated. There was a selection process to name the newsletter. By a popular vote the name will be “Northern Sky”.
- December We had the opportunity to appear on television twice this month to inform people in our area about the formation of the “Thunder Bay Centre”.
From the initial 9 members in 1986 we have now grown to almost 40. May 1989 bring all members of the RASC many clear nights to enjoy astronomy.

BEV CONNELL, *Secretary*

TORONTO CENTRE

The major event for the Toronto Centre during the past year was the solar eclipse expedition to the Philippines in March. Organized by Randy Attwood, this trip was shared by 23 people and was a great success.

The 1987 Awards Banquet featured Mr. Christopher Trump, Vice President of Spar Aerospace, who spoke on the history and future of Canada in space. Toronto Centre award winners were: Paul Gunter who received the Bert Winnearls Award; Ted Molczan who received the Bertram J. Topham Award; Jack Winzer who received the Jesse Ketchum Award.

1987-88 marked the first year of the Toronto Centre Gold Medal (This award had been presented by the National Society to honour the highest ranking fourth year honours student in the undergraduate astronomy programme of the University of Toronto. In 1987 the Society’s National Council replaced that award with the Plaskett Medal, to be awarded jointly with the Canadian Astronomical Society for an outstanding PhD. thesis in astronomy. The Toronto Centre Council decided to maintain the tradition of the Gold Medal by taking over responsibility for the award.) The first recipient of the Toronto Centre Gold Medal was W. Barry Sloan.

Although the Centre Bylaw Review Committee was dormant this year, the Centre Council, and especially President Dr. Ralph Chou and the National Council Representatives, have been very active in the current review of the bylaws of the National Society.

The Editorial Committee, led by editor Clifford Hand and assistant editor Mary Anne Harrington, continued its vital role of publishing and distributing 6 bimonthly issues of our newsletter, *Scope*.

It is with regret that we record the deaths of the following members during the past year: Mr. Norman D. Duhig, Mr. Desmond Prime and Mr. David W. Rosebrugh. It is also with regret that we record the death of Dr. F.E.L. Priestley, husband of Dr. Helen Hogg.

The Program Committee under Dr. John Percy organized 10 lecture meetings, including one joint meeting with the Royal Canadian Institute. The speakers were:

- 2 October 1987: Judith A. Irwin on Active Spiral Galaxies
- 30 October 1987: Prof. Marshall McCall on The Universe After Shelton
- 27 November 1987: Prof. Chris Rogers on The Birth of Stars
- 29 January 1988: Mary W. Grey on The Story of The Dominion Observatory
- 26 February 1988: Prof. William Clarke on The Herschels: Father, Sister and Son
- 13 March 1988: Prof. Richard Bond on the “Dark” Matter of the Big Bang (RCI)
- 25 March 1988: Prof. Allan Tough on Extraterrestrials and Humanity’s Future
- 22 April 1988: Thomas Williams on The Contributions of Amateurs to Astronomy
- 27 May 1988: Douglas George on A Telescope Graphics Display System
- 30 September 1988: Alex Fullerton on The Hottest Stars

Thanks go to Eric Galt and Darnley Wright for organizing refreshments after the meetings.

Ten Members Nights were organized by the Observational Activities Committee under Steven Spinney and Guy Nason. Topics of some of the presentations included astrophotography, solar eclipse, photometry, variable stars and observing artificial satellites.

Under Randy Attwood, the Observatory Development Committee was organized into three sub-committees to investigate and report on the complex and interacting issues of: site selection; design and use; and funding.

The Public Education Committee, chaired by Randy Attwood, reactivated *Astronomy Toronto*, a television program broadcast on Rogers Cable TV. This is now a full one-hour program which goes to air once each quarter. Thanks go to Paul Fjeld, Steven Spinney and Robert May for bringing this endeavour to fruition in its eighth year. Although clouded out of its original dates in September, Mars Nights in three locations across Metropolitan Toronto attracted 500 members of the public in October. Ted Molczan, Mike Daly, Steven Spinney, Paul Markov and several other members provided assistance in this project.

The annual Toronto Centre picnic was rained out this year, but the David Dunlap Observatory Open House took place as scheduled. The thanks of the membership goes to Susan Bolton for organizing this event and to the staff of the D.D.O. for their hospitality.

Jack Winzer led the Telescope Makers Group through a very busy year. Eighteen members have constructed telescopes this year. Eight members are currently building 12 1/2 inch Cassegrain telescopes in the advanced group. In addition, the group has made several improvements in the equipment and facilities of the optical workshop.

Paul Markov canvassed the membership and compiled the Toronto Centre's fourth annual *Directory of Observers*.

Shortly after he was elected to the Centre Council, Neil Kinnear was assigned by his company to a position outside the country. After accepting Mr. Kinnear's resignation, Council appointed Stephen Mastellotto in his place.

This meeting marks the retirement of Kathleen Fall from Council. The thanks of the membership and Council are extended to Mrs. Fall for her contributions to Council and the New Members Committee.

Thanks should be recorded for all Toronto Centre councillors and volunteers who continually and tirelessly contribute their time and effort.

Finally, thanks must go on record to the McLaughlin Planetarium for allowing us to use their facilities and mailing address.

GUY NASON, *Secretary*

VANCOUVER CENTRE

During 1988 we continued to meet every month, therefore 12 Council and 12 regular meetings were held. A monthly raffle (with astronomy-related door prize) provided fun and revenue. International Astronomy Day (April 23) was well attended. In co-operation with the Greater Vancouver Regional District (GVRD) we participated in "Fraser River Day" June 5 and "Celebration of Nature" Oct 1/2. Several members attended the General Assembly in Victoria, and four members travelled to the Philippines to view the eclipse of the sun on March 18. Two very successful star party weekends were held at the east gate of Manning Park in August and September, and the Mt. Kobau Star Party was again well attended. We visited TRIUMF and the telescope at UBC as a group. "Astrowap" was again held in November.

1988 meetings:

- January 4 members of the observers' group, "in transit."
- February Planetarium show.
- March Speakers from TRIUMF
- April Leigh Palmer, Jay Anderson with a video of March 18 eclipse.
- May Barry Beyerstein of the B.C. Skeptics Association.
- June Planetarium show and report on "Fraser River Day."

July	Ken Hewitt-White on summer meteors, report on the G.A.
August	Visit to UBC telescope.
September	Planetarium show, reminders of "Mars Watch" and star party.
October	Joint meetings with the B.C. Space Sciences Society.
November	Dr. Mark Halpern, UBC, on infrared astronomy.
December	Annual meeting, elections, Dr. Phil Gregory on UBC Galactic Patrol.

SALLY BAKER, *Secretary*

VICTORIA CENTRE

Our Centre enjoyed a very busy year in 1988. Under the presidency of Gene Steeves, we underwent a transition directed towards a more active participation in observing programs and membership-oriented activities. We now have an observers group which meets monthly in addition to the already active telescope-makers group.

Our slate of lectures for the past year included:

January	Dr. Doug Welch: "Efficiency in Astronomy"
February	Dr. Bernard Bopp: "Automation for Amateur Astronomy"
March	Dr. Mike Bolte: "Blue Stragglers: Stars that Live Too Long"
April	Members Night The Victoria Hobby Show was held April 14th through 17th, and we had an excellent display on site for its duration.
May	Randall Pyke: "The Antropic Principle"
June	Dr. Andrew Woodsworth: "Do Red Giants Flare?"

There was no regular meeting for the months of July and August; however our General Assembly, held as a joint meeting with the 100th annual meeting of the Astronomical Society of the Pacific, was more than enough to keep us busy, and was tremendously successful. Again, our thanks to our local Chair, Jack Newton, A.S.P. past president, Jim Hesser and all the volunteers for an extremely well-done job!

During August, our public lecture series "Summer Evenings with the Stars" was held weekly, and featured a tour of D.A.O. and keynote lectures by Jack Newton "A Colour Portrait of the Universe", Dr. David Crampton "Black Holes" and Dr. Michael Pierce "The Age and Size of the Universe"

September 14th was a members night, and a number of interesting projects were highlighted.

October's program was "Why Look at RR Lyrae Stars?", by Horace Smith.

A quick review of the above speakers instantly reveals the fact that the Dominion Astrophysical Observatory was instrumental in bringing to us a large number of top-notch speakers and added tremendously to our meetings. We are very grateful for the assistance provided us by D.A.O.

ALICE NEWTON, *Secretary*

WINDSOR CENTRE

For the Windsor Centre 1988 was one of great challenges and even greater triumphs.

Early in the year the Centre had two very well esteemed members pass away. Jim Loudon: who was staff astronomer for the University of Michigan's Exhibit Museum. Also Cyril Hallam, who was the main founder of the Windsor Centre in 1945. The contributions these persons made were indeed of importance not only to the Centre but to the community as well. Their work in promoting astronomy is greatly appreciated.

The first membership meeting of the year was a members' night which started it out well. After the April meeting we had the opportunity to observe bright Venus 1/4 degree south of the Moon. After the May

meeting Al Des Rosiers showed us Comet Liller through his 20 cm reflector, in the city. We had a fine setup again at the Main Branch of the Windsor Public Library, for Astronomy Day. Dan Taylor, organizer, reported that 200 persons attended. Jeff Peacock was able to interest passersby with a view of the sun (with filter) through his 20 cm telescope. Henry Lee began his duties as National Recorder at last summer's G.A. in Victoria. Members attended the Stellafane and Star-Fest conventions, as usual. We had some grand views of Mars at an observing session at Point Pelee National Park on 10 September. Paul Comision gave a good talk on deep sky objects, as the exchange speaker from the Ottawa Centre at our October meeting. C. Joady Ulrich and Matt Bourdeau returned the exchange in early December.

On 4 November the Centre was involved with a truly historic event. Along with the Detroit Astronomical Society and the University of Windsor Department of Physics, we sponsored Dr. Clyde Tombaugh, discoverer of the planet Pluto, who gave an extremely fine presentation at the University. His warm and fascinating address was given to about 400 persons; as reported in an article on the event in the Windsor Star. The Centre members were glad to have him in the city and to help him promote a scholarship fund for graduate astronomers. John Griese III, Assistant Director of Stanford University Observatory in Connecticut, gave a very good presentation on variable stars at our Annual Meeting in November. Awards given in 1988 were: a Messier Certificate to Tom Hurley and a Membership Certificate to John Hurley, for his diligent service to the Centre. It should be noted that Dan Taylor and a few other members, early in the year, were able to observe the globular cluster Omega Centauri, from mainland Canada; definitely a first.

We extend special thanks to Dr. John Huschilt, Jack Brisbin; President of the Detroit Astronomical Society and Randy Groundwater, for organizing Dr. Tombaugh's visit. As well we thank Paul Comision and John Griese III, for their contributions to the meetings. Thanks also to Paul Preney, who stepped in to get the newsletter out; to Dan Taylor for organizing this year's Astronomy Day activity and to Dorothy Hallam, for her special contribution which was used on behalf of her husband towards the Tombaugh lecture. Acknowledgement should also be given to Steve Pellarin, for his presentations at the meetings and for obtaining liability insurance for the Centre. The Windsor Centre had 9 membership meetings, 3 observing sessions in the county, 1 social and 7 Council meetings for 1988.

The meeting agenda for the year was as follows:

January	James Meredith: "A Physical Explanation of the Bermuda Triangle," Matt Bourdeau spoke on the classification of galaxies and planetary nebulae, Al Des Rosiers discussed the construction of his 20 cm reflector.
February	C. Joady Ulrich: "Galactic Clusters and Superclusters"
March	Steve Pellarin gave a presentation on becoming familiar with observing asteroids
April	Jack Brisbin: "Vision and Your Telescope"
May	Steve Pellarin: "Observing Spring Galaxies"
June	Steve Pellarin and Paul Preney: "First RASC – Windsor Centre Astro-Quiz"
September	Al Des Rosiers and Tom Sharron: "Astrophotography with a Scotch Mount"
October	Paul Comision: "Deep Sky Objects: What are We Looking at?"
November	John Griese III: "Cataclysmic Variables"

C. JOADY ULRICH, *Secretary*

WINNIPEG CENTRE

Winnipeg Centre had a busy time in 1988, what with photometry, cold cameras, star parties and the like. Some highlights were:

January	Our first meeting of 1988 began with guest speaker Patrick O'Connor. Patrick presented a talk, illustrated with slides, on the Astronomical Society of the Pacific convention. Highlights of the trip and the talk included tours of the Jet Propulsion Laboratory, the Goldstone Tracking Station, and the Mount Palomar 5 metre telescope.
February	Movie night.

- March Winnipeg and Calgary embarked on a speaker exchange, with Myra Rutkowski (nee Banman) heading out west, and Don Hladiuk returning home to Winnipeg. Don expanded on his presentation given at the 1987 General Assembly, on astroleemes (meteor craters) in Canada, while Myra spoke on the role of women in the space program, and the advantages and problems they face in their role.
- April Movie night.
- May As Jack Newton's visit coincided with our monthly meeting, we moved out to the Fort Whyte Centre for Environmental Education, where we oohed and aahhed over Jack's photos, and later did some casual observing. (Some Winnipeg members managed to purchase Jack's cold camera, and are still oohing and aahhing!)
- June Winnipeg Centre's annual Family Barbeque was a huge success, with members, their friends and family all enjoying good food and good conversation. Ian Shelton magically appeared and presented our Centre with a 16 × 20" photo of Halley's Comet, taken during his time in Chile. Of course, this all happened during the daylight, because when it got dark, it was time for the 2nd ANNUAL GREAT MESSIER RACE!
- July and August there were no scheduled meetings, but members were kept busy with photometry, the newly-purchased cold camera, and many star parties.
- September Winnipeg Centre together with St. Paul's College, University of Manitoba, held a public meeting on the topic of Federal and Provincial Government Proposals for the Physical Sciences. Representatives from each of the three political parties, both federally and provincially, attended. Following the presentations of each representative, questions were taken from the floor, making for some lively discussions.
- October Ian Cameron, producer at the Lockhart Planetarium, University of Manitoba, spoke on "Speed and the distance scale."
A public Mars Watch was held by Winnipeg Centre and the Manitoba Planetarium at Assiniboine Park. About 10 scopes were out, and long lines formed at each one. The crowd was estimated to be about 250 people. We had a fair amount of publicity from newspapers and TV. Chris Brown was interviewed by CBC-TV at the site, and he was simply awe-inspiring!
- November Professor Douglas Forbes, visiting lecturer at the University of Manitoba, presented a talk on helium, its abundance in the Galaxy, and its distribution in the Solar System.
- December Our Christmas meeting went out with a bang, having Dr. Richard Bochonko present his lecture on the latest news about Supernova 1987A (named after our own Ian Shelton!). He used a giant videodisc system, complete with a 15' screen.

MYRA RUTKOWSKI, *Secretary*

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Librarian – J. Sid Sidhu, 4396 Tremblay Dr, Victoria, V8N 4W5, 477-9315
Editor – Mrs. A. Newton, RR 1, 801 Stanehill Pl, Victoria, V8X 3W9
Director Telescopes – Malcolm Scrimger
Co-Director of Telescopes – J. Pazder, 3758 Waring Pl, Victoria, V8P 5E9
Telescope-making Coordinator – R. Williams, 1820 Rossiter Pl, Victoria, V8N 5H1
Observation Coordinator – C. Spratt, 2100 Granite St, Victoria, V8S 3G7
Council – Dr. J.L. Climenhaga, Dr. D. Crampton, J. Fletcher, Dr. James Hesser, S. Godkin, J. Newton, M. Parker, P. Thomas, R. Williams
National Council Representative – Mr. John Howell, R.R. #3, Compartment 23, 102 Harrison, Ganges, V0S 1E0 (604) 537-2743

WINDSOR CENTRE

Honorary President – Dr. John Huschilt, Physics Dept, Univ. of Windsor, Windsor, ON, N9B 3P4
Past-President – Randy Groundwater, 3400 Askin Ave., Windsor, N9E 3J7
President – Steve Pellarin, 3140 Parkwood Ave, Windsor, N8W 2K4
1st Vice-President – Dan Taylor, 1182 Chilver Rd, Windsor, N8S 2J4
Secretary – C. Joady Ulrich, 243 Watson Ave, #4, Windsor, N8S 3R8 (519) 945-3132
Treasurer – John Hurley, RR #4, Amherstburg, N9V 2Y9
Librarian – Dan Taylor, 1182 Chiver Road, Windsor, N8S 2J4
Director of Observing – Alan Des Rosiers, 149 Lesperance Rd, Tecumseh, N8N 1V9
Editor – Paul Preney, 1482 Rushwood Cres, Windsor, N8W 2K4
Asst. Editor – S. Pellarin
Dir. Public Relations – Randy Groundwater
Councillors – J. Bennett; P. Langin; H. Lee; J. Meredith; P. Preney
National Council Representative – C. Joady Ulrich, 243 Watson Ave, #4, Windsor, N8S 3R8 (519) 945-3132
(Alternate) – Henry Lee, 421 Riverside Dr, E, Windsor, N8Y 1B6

WINNIPEG CENTRE P.O. Box 215, St. James P.O. Winnipeg, MB R3J 3R4

Past-President – John Haines, 111 Gull Lake Rd, Winnipeg, R3T 4X1, 275-0376

President – Chris Rutkowski, 2108 – 100 Plaza Drive, Winnipeg, R3T 5K8, 269-7553

1st Vice-President – Lorence Mlodzinski, 901 Fleming Ave, Winnipeg, R2K 1V7 668-3974

2nd Vice-President – Len Gamache, 586 Cusson Street, Winnipeg, R2J 0P5, 237-3858

Secretary – Mrs. Myra Rutkowski, 2108 – 100 Plaza Drive, Winnipeg, R3T 5K8, 269-7553

Treasurer – Doug Bale, Box 52 Gr. 381 RR 3, Winnipeg, R3C 2E7, 661-8746

Librarian –

Editor –

Asst. Editor –

Council – M. Abdel-Hadi, Chris Brown, G. Matthews, P. Paradis, G. Raineault, S. Runge

National Council Representative – L. Mlodzinski

GOLD MEDAL OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

The Gold Medal of the Society was established in 1905 as an encouragement to the study of astronomy. It is awarded to the graduating fourth year University of Toronto Arts & Science student who has both an A standing in his fourth year and the highest average mark in the two full courses and two half courses in astronomy which are contained in the Astronomy specialist programme, provided this average is over 80%. If no student satisfies these criteria, the award is not made.

1906 – *W.E. Harper	1937 – D.A. MacRae	1968 – P.G. Martin
1907 – *R.M. Motherwell	1940 – W.F.M. Buscombe	1970 – J. Kormendy
1909 – *R.K. Young	1948 – R.W. Tanner	1971 – Blake F. Kinahan
1910 – *R.J. McDiarmid	1949 – I. Halliday	1972 – M.J. McCutcheon
1911 – R.S. Sheppard	1956 – D.C. Morton	1976 – Chris Rogers
1913 – *E.A. Hodgson	1960 – C.R. Purton	1977 – M. De Robertis
1914 – G.S. Campbell	1961 – R.C. Henry	1978 – D.R. Gies
1926 – *F.S. Hogg	1962 – J.R. Percy	1979 – N. Duric
1929 – P.M. Millman	1963 – P.H. Reynolds	1981 – T.C. Box
1931 – W.S. Armstrong	1965 – A.F.J. Moffat	1982 – M.J. Gaspar
1933 – K.O. Wright	1966 – W.A. Sherwood	1984 – Glenn D. Starkman
1935 – Miss F.S. Patterson	1967 – R.H. Chambers	1985 – G.A. Drukier
		1987 – Man Hoi Lee

*Deceased

CHANT MEDAL OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

The Chant Medal of the Society was established in 1940 in appreciation of the great work of the late professor C.A. Chant in furthering the interests of astronomy in Canada. This medal is awarded, not oftener than once a year, to an amateur astronomer resident in Canada on the basis of the value of the work carried out in astronomy and closely allied fields of original investigation.

Awards have been made to the following:

1940 – Bertram J. Topham (Toronto)	1953 – Jean Naubert (Centre d'Astronomie de Montréal)
1941 – H. Boyd Brydon (Victoria)	
1942 – *W.G. Colgrove (London)	1955 – *Frank J. DeKinder (Montréal)
1943 – *Cyril G. Wates (Edmonton)	1956 – Maurice Drolet (Quebec)
1945 – Paul-H. Nadeau (Quebec)	1959 – Earl Milton (Edmonton)
1948 – Isabel K. Williamson (Montreal)	1967 – R.R. Thompson (Toronto)
1949 – Frank Sisman (Hamilton)	1979 – Rolf G. Meier (Ottawa)
1950 – *F. Keith Dalton (Toronto)	1980 – David Levy (Kingston)
1951 – DeLisle Garneau (Centre d'Astronomie de Montréal)	1986 – Warren Morrison (Kingston)
	1987 – Damien Lemay (Quebec)
	1988 – Chris Spratt (Victoria)

KEN CHILTON PRIZE

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

Awards have been made to the following:

1978 – J. Newton (Victoria)
1979 – W. Morrison (Kingston)
1981 – C. McCaw (Vancouver)
1983 – C. Spratt (Victoria)
1988 – P. Teece (Victoria)

THE PLASKETT MEDAL

Canada's two national astronomical societies, the Royal Astronomical Society of Canada and the Canadian Astronomical Society, have joined together in the sponsorship of a new award for students of astronomy at Canadian universities. The joint R.A.S.C./C.A.S. award entitled THE PLASKETT MEDAL is awarded in recognition of the pivotal role played by John Stanley Plaskett in the establishment of astrophysical research in Canada.

An award is made annually to the graduate from a Canadian university who is judged to have submitted the most outstanding Doctoral Thesis in astronomy and astrophysics in the preceding two calendar years. An award need not be made every year.

1988 – R. Gray (Toronto)

SERVICE AWARD MEDAL OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

The Service Award was established in 1959 and, on recommendation of a special committee of the National Council, this small bronze plaque is presented to members who have performed outstanding service to a Centre or to the National Society.

- | | |
|---|--|
| 1959 – *E.J.A. Kennedy (Nat. Secretary) | 1970 – Norman Green (Hamilton) |
| *J.H. Horning (National Treasurer) | J.E. Kennedy (Saskatoon) |
| 1960 – *Charles M. Good (Montreal) | 1971 – *K.B. Meiklejohn (Calgary) |
| Miss F. Laforest (Montréal) | J.N.R. Scatliff (Winnipeg) |
| Frederic L. Troyer (Toronto) | 1972 – Vern Ramsay (Toronto) |
| 1961 – *Robert Peters (Victoria) | B.F. Shinn (Winnipeg) |
| 1962 – Jean Asselin (Montréal) | F. Schneider (Hamilton) |
| Robert J. Clark (Vancouver) | 1973 – Fred P. Lossing (Ottawa) |
| *Jesse Ketchum (Toronto) | 1974 – Ian Halliday (Ottawa) |
| *Joseph A. Pearce (Victoria) | Fred Williams (Victoria) |
| 1963 – *Edwin E. Bridgen (Montreal) | 1975 – D.J. FitzGerald (Toronto) |
| Miss M. Burland (Ottawa) | 1976 – F. Loehde (Edmonton) |
| *A. Vibert Douglas (Kingston) | *Ken Chilton (Hamilton) |
| 1964 – *C.S. Beals (Ottawa) | R. Belfield (Winnipeg) |
| *M.W. Burke-Gaffney, S.J. (Halifax) | Mrs. P. Belfield (Winnipeg) |
| W.T. Goddard (Hamilton) | 1977 – P. Marmet (Quebec) |
| 1965 – *D.C. Bawtenheimer (Windsor) | J.R. Percy (Toronto) |
| *John F. Heard (Toronto) | *Mrs. D. Russell (St. John's) |
| A.M. Crooker (Vancouver) | 1978 – Mrs. Marie Fidler Litchinsky |
| *Ernest S. Keeping (Edmonton) | (Calgary & Toronto) |
| *W.S. Mallory (Hamilton) | 1979 – *R. Noel de Tilly |
| 1966 – P. Lemieux (Montreal) | (Centre d'Astronomie de Montréal) |
| *S. Litchinsky (Calgary) | A.W. Scott (Toronto) |
| W.J. McCallion (Hamilton) | 1980 – S.A. Mott (Ottawa) |
| W.A. Warren (Montreal) | 1981 – *L.E. Coallier (Centre d'Astro. Montréal) |
| 1967 – H.S. Hogg (Toronto) | A. Covington (Ottawa) |
| P.M. Millman (Ottawa) | H. Creighton (Toronto) |
| *R.J. Northcott (Toronto) | Miss I.K. Williamson (Montreal) |
| *H. Simard (Montreal) | 1982 – D.P. Hube (Edmonton) |
| J.F. Wright (Vancouver) | G.N. Patterson (Saskatoon) |
| 1968 – *D.R.P. Coats (Calgary & Winnipeg) | 1983 – C. Aikman (Victoria) |
| George Ball (Victoria) | L.A. Higgs (Ottawa) |
| *Herbert Fox (Hamilton) | |

- | | |
|--|--|
| 1984 – *L.V. Powis (Hamilton)
J.A. Winger (Hamilton)
P. Jedicke (London)
H.N.A. Maclean (Niagara)
*C. Hallam (Windsor)
H. Lee (Windsor) | 1986 – Randall Brooks (Halifax)
Leo Enright (Kingston) |
| 1985 – J. Cam Fahrner (Calgary) | 1987 – R.P. Broughton (Toronto)
C.G. Clark (Toronto) |
| | 1988 – A.H. Batten (Victoria)
R.L. Bishop (Halifax)
J. Locke (Ottawa)
E. Orr (Hamilton) |

*Deceased

SIMON NEWCOMB AWARD

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

- 1979 – William J. Calnen (Halifax)
- 1981 – Christopher Rutkowski (Winnipeg)
- 1982 – Phil Mozel (Toronto)
- 1985 – Donald F. Trombino (U.S.A.)
- 1986 – David Chapman (Halifax)
- 1987 – Peter Jedicke (London)

DECEASED MEMBERS IN 1988

- E.E. Bridgen (Victoria)
- C.W. Cadloff (Montreal)
- H.H. Cornfield (Toronto)
- J.G. Craig (Hamilton)
- A.V. Douglas (Kingston)
- C.S. Duhig (Toronto)
- C. Hallam (Windsor)
- J. Loudon (Windsor)
- W.H. Morton (Montreal)
- J.A. Pearce (Victoria)
- D.A. Prime (Toronto)
- I.W. Stuart (Hamilton)

CENTRES TREASURERS' REPORTS FOR 1988

	Calgary	Edmonton	Halifax	Hamilton	Kingston	London	Montreal	Montreal	Niagara
								CF	
REVENUE									
Membership Fees	6009.08	3467.00	2630.00	3110.00	798.23	935.00	2716.54	990.00	
Life Member Grants	190.00	120.00	290.00	30.00	90.00	—	210.00	30.00	
Donations	—	—	226.00	1141.65	—	—	47.00	—	
Educational Activities	—	—	—	300.00	—	—	—	—	
Interest & Dividends	443.81	398.00	178.95	163.93	10.01	11.49	3286.51	32.00	
Sales of Handbooks (Net)	—	—	372.58	21.00	10.00	—	74.00	9.00	
Advertising	115.00	177.00	60.00	—	—	—	246.73	—	
General Assembly (incl. Travel Grants)	—	—	348.00	—	—	—	—	—	
Other Grants	363.02	—	1000.00	—	—	—	254.31	88.00	
Miscellaneous	3648.49	30.00	85.24	600.87	—	—	—	—	
Total Revenue	10769.40	4192.00	5190.77	5367.45	908.24	946.49	6835.09	1149.00	
EXPENDITURES									
Fees remitted to National Office	2748.00	1710.00	1569.00	1341.00	489.00	479.80	1229.42	594.00	
Library	113.00	233.00	41.95	350.40	—	—	105.94	—	
Meetings & Newsletters	1731.34	1277.00	1645.22	762.42	405.29	119.38	1008.00	—	
Annual Dinner (Net)	1374.65	—	—	—	—	—	—	—	
General Assembly (incl. Travel Grants)	—	—	696.00	—	—	—	—	—	
Equipment & Supplies	—	853.00	—	714.22	—	198.50	493.26	—	
Office Administration	271.21	33.00	113.37	—	—	137.46	225.30	—	
General Expense & Audit	—	87.00	—	366.46	—	—	589.76	—	
Educational Activities	304.42	—	5.00	—	21.98	—	169.79	189.00	
Insurance	—	—	—	566.00	150.00	—	808.78	123.00	
Awards & Donations	364.15	12.00	58.18	—	52.18	—	568.82	247.00	
Operating Expenses Observatory	790.00	—	—	805.14	—	48.00	228.52	—	
Miscellaneous	1761.61	—	71.79	195.45	31.80	—	—	—	
Total Expenditures	9458.38	4205.00	4200.51	5101.09	1150.25	983.14	5427.59	1153.00	
Surplus or (Deficit) on Operations	1311.02	(13.00)	990.26	266.36	(242.01)	(36.65)	1407.50	(4.00)	
Balance from 1987	9668.47	6694.00	895.81	—	699.49	686.75	9158.05	—	
Balance to 1988	10979.49	6681.00	1886.07	266.36	457.48	650.10	10565.55	—	
Other Assets	60344.46	4365.00	6322.81	—	—	—	—	—	

NOT REPORTED

NOT REPORTED

CENTRES TREASURERS' REPORTS FOR 1988

	Ottawa	Toronto	Vancouver	Victoria	Windsor	Winnipeg
REVENUE						
Membership Fees	4685.00	3231.00	425.00	965.00	23885.00	2363.00
Life Member Grants	340.00	30.00	20.00	40.00	830.00	20.00
Donations	1659.97	116.00	—	262.38	443.00	330.00
Educational Activities	—	400.00	—	231.00	—	—
Interest & Dividends	14.90	371.24	172.50	178.28	2657.00	—
Sales of Handbooks (Net)	285.00	3167.50	120.00	10.00	(2.00)	69.00
Advertising	—	—	—	988.00	—	—
General Assembly (incl. Travel Grants)	—	—	—	741.00	—	—
Other Grants	—	350.00	—	—	—	—
Miscellaneous	811.59	70.07	41.20	347.00	5599.00	1.00
Total Revenue	7796.46	7735.81	778.70	2033.66	35141.00	3031.00
EXPENDITURES						
Fees remitted to National Office	2811.00	916.00	249.00	585.50	14178.00	885.00
Library	—	141.47	191.39	—	180.00	—
Meetings & Newsletters	2258.50	696.46	—	295.89	5586.00	—
Annual Dinner (Net)	—	—	—	—	(190.00)	—
General Assembly (incl. Travel Grants)	—	100.00	—	—	1589.00	—
Equipment & Supplies	237.65	310.19	—	196.08	3232.00	789.00
Office Administration	115.63	32.45	105.44	92.28	425.00	172.00
General Expense & Audit	—	350.00	—	424.00	358.00	—
Educational Activities	689.00	299.75	—	—	400.00	—
Insurance	—	—	—	—	179.00	—
Awards & Donations	904.07	400.00	—	39.69	1.00	—
Operating Expenses Observatory	—	1377.97	294.50	25.45	7099.00	—
Miscellaneous	—	—	—	—	—	—
Total Expenditures	7015.85	6734.05	840.33	1658.89	33037.00	3324.00
Surplus or (Deficit) on Operations	780.61	1001.76	(61.63)	223.63	2104.00	(293.00)
Balance from 1987	13281.72	5514.47	182.09	3175.93	37992.00	1113.00
Balance to 1988	14062.33	6516.23	120.46	—	40096.00	820.00
Other Assets	—	—	—	—	—	—

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

FINANCIAL STATEMENTS

DECEMBER 31, 1988

C. J. Terkham & Associates

C. J. Tinkham & Associates

Chartered Accountants

C. J. TINKHAM, C.A., C.M.C.
D. C. TINKHAM, B.COMM., C.A., C.M.C.
P. J. BROCKLESBY, B.B.A., C.A.

2842 BLOOR STREET WEST
TORONTO - ONTARIO
M8X 1B1

AUDITORS' REPORT

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

We have examined the balance sheet of The Royal Astronomical Society of Canada as at December 31, 1988, and the statements of revenue and expenditure and equity, for the year then ended. Our examination was made in accordance with generally accepted standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of the Society as at December 31, 1988, and the results of its operations for the year then ended in accordance with the accounting principles set out in Note 1 applied on a basis consistent with that of the preceding year.

C. J. Tinkham & Associates

TORONTO, Ontario
January 25, 1989

CHARTERED ACCOUNTANTS

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
BALANCE SHEET
AS AT DECEMBER 31, 1988

A S S E T S

	<u>1988</u>	<u>1987</u>
<u>CURRENT</u>		
Cash and short term investments	\$ 126,778	\$ 139,265
Accounts receivable	20,506	25,075
Prepaid expenses	269	269
Accrued interest receivable	<u>10,570</u>	<u>8,186</u>
	<u>158,123</u>	<u>172,795</u>
<u>INVESTMENTS</u>		
Marketable securities - at cost	<u>3,019</u>	<u>3,019</u>
<u>SPECIAL PURPOSE FUNDS (Schedule C)</u>		
Cash and short term deposits (including accrued interest)	49,550	32,915
Marketable securities - at cost	4,000	4,000
Guaranteed investment certificate	<u>101,600</u>	<u>91,600</u>
	<u>155,150</u>	<u>128,515</u>
<u>FIXED</u>		
Office building, furniture, equipment, library (nominal value)	<u>1</u>	<u>1</u>
	<u>\$ 316,293</u>	<u>\$ 304,330</u>

Approved on behalf of the Council
of the Society

L. A. Hogg
.....President

B. Ralph Chan
.....Treasurer

L I A B I L I T I E S

	<u>1988</u>	<u>1987</u>
<u>CURRENT</u>		
Accounts payable and accrued charges	\$ 50,009	\$ 41,697
Deferred revenue		
- Membership fees for ensuing year	23,359	23,875
- Journal and handbook subscriptions	18,921	20,985
- Unappropriated life membership fees (Schedule A)	<u>36,938</u>	<u>33,587</u>
	<u>129,227</u>	<u>120,144</u>
 <u>SPECIAL PURPOSE FUNDS</u> (Schedule C)		
 <u>EQUITY</u>		
	 <u>\$ 316,293</u>	 <u>\$ 304,330</u>

C. F. Tenkham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
STATEMENT OF EQUITY
FOR THE YEAR ENDED DECEMBER 31, 1988

	<u>1988</u>	<u>1987</u>
<u>BALANCE</u> , January 1	\$ 55,671	\$ 20,138
<u>Add</u> : Excess of revenue over expenditure	<u>1,245</u>	<u>35,533</u>
<u>Less</u> : Transfer to Special Purpose Funds	<u>56,916</u> <u>25,000</u>	<u>55,671</u> <u>-</u>
<u>BALANCE</u> , December 31	<u>\$ 31,916</u>	<u>\$ 55,671</u>

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
STATEMENT OF REVENUE AND EXPENDITURE
FOR THE YEAR ENDED DECEMBER 31, 1988

<u>REVENUE</u>	<u>1988</u>	<u>1987</u>
Membership fees		
- R.A.S.C. Centres	\$ 35,819	\$ 35,172
- Individual members	18,407	19,489
- Life membership: annual appropriation	<u>1,944</u>	<u>1,794</u>
	<u>56,170</u>	<u>56,455</u>
Grants and Donations		
- Government of Canada-annual grant	2,000	-
- Miscellaneous donations	<u>579</u>	<u>132</u>
	<u>2,579</u>	<u>132</u>
Publications		
- R.A.S.C. Journal: subscriptions	23,132	22,936
reprints	1,077	171
publishing revenue	9,426	7,111
- Observer's Handbook	<u>85,828</u>	<u>86,341</u>
	<u>119,463</u>	<u>116,559</u>
Miscellaneous income		
- interest on investments	14,908	14,928
- insignia sales	503	486
- rent	<u>11,253</u>	<u>10,337</u>
	<u>26,664</u>	<u>25,751</u>
	<u>204,876</u>	<u>198,897</u>
<u>EXPENDITURE</u>		
Publications (Schedule B)	117,534	96,646
Office salaries and employee benefits	43,745	35,398
Postage and shipping expense	5,145	5,305
General and office expense	4,670	4,157
Stationery, printing and supplies	1,507	57
Life membership allotment to Centres	2,810	2,860
General assembly and travel expense	10,950	6,245
Legal and accounting	3,800	2,950
Insignia, medals and awards	1,894	824
Telephone	837	1,227
Insurance	950	897
Library expense	1,119	616
Office equipment purchases	2,830	1,000
Bad debts	61	132
Building expenses	<u>5,779</u>	<u>5,050</u>
	<u>203,631</u>	<u>163,364</u>
<u>EXCESS OF REVENUE OVER EXPENDITURES</u>	<u>\$ 1,245</u>	<u>\$ 35,533</u>

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1988

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 of \$1. Any new acquisitions are included in expenditures for the year.

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, 1988

	<u>1988</u>	<u>1987</u>
BALANCE, January 1	\$ 33,587	\$ 34,581
<u>Add: Life membership fees received</u> in the year	<u>5,295</u>	<u>800</u>
	38,882	35,381
<u>Deduct: Appropriation to general</u> account	<u>1,944</u>	<u>1,794</u>
BALANCE, December 31	<u>\$ 36,938</u>	<u>\$ 33,587</u>

SCHEDULE B
PUBLICATION COSTS

R.A.S.C. Journal

Printing of journal	\$ 49,584	\$ 33,773
Printing of National Newsletter	12,008	11,182
Editorial assistance	1,000	1,000
Distribution costs	13,471	10,502
Reprints	<u>2,268</u>	<u>2,482</u>
	<u>78,331</u>	<u>58,939</u>

Observer's Handbook

Printing	31,040	29,786
Distribution costs	5,792	5,792
Advertising	<u>2,371</u>	<u>2,129</u>
	<u>39,203</u>	<u>37,707</u>
	<u>\$ 117,534</u>	<u>\$ 96,646</u>

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
 SCHEDULE C
COMPOSITION OF SPECIAL PURPOSE FUNDS
AS AT DECEMBER 31, 1988

	<u>RUTH NORTHCOTT FUND</u>	<u>ENDOWMENT FUND</u>	<u>CENTENNIAL FUND</u>	<u>TOTAL</u>
Cash	\$ 6,166	\$ 14,000	\$ 5,000	\$ 25,166
Term deposits	24,000	-	-	24,000
Securities	4,000	-	-	4,000
Guaranteed Investment Certificate	-	101,600	-	101,600
Accrued interest	384	-	-	384
	<u>\$ 34,550</u>	<u>\$ 115,600</u>	<u>\$ 5,000</u>	<u>\$ 155,150</u>

C. J. Tibbham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

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