



Supplement to the JOURNAL

of the **ROYAL ASTRONOMICAL**
SOCIETY of CANADA

ANNUAL REPORT 1985

APRIL 1986

PRESIDENTS OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

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

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

HONORARY MEMBERS OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Dr. V.A. Ambartsumian (U.S.S.R.)
Dr. R.B. Baldwin (U.S.A.)
Dr. F.M. Bateson (N.Z.)
Dr. A. Dollfus (France)
Dr. Leo Goldberg (U.S.A.)
Dr. Stephen W. Hawking (England)
Dr. W. Iwanowska (Poland)

Dr. J.H. Oort (Netherlands)
Dr. A.R. Sandage (U.S.A.)
Dr. Martin Schwarzschild (U.S.A.)
Prof. Bengt G. Strömgren (Denmark)
Dr. A. Unsold (Germany)
Prof. H.C. van de Hulst (Netherlands)
Dr. R.v.d. R. Woolley (S. Africa)

REPORT OF THE PRESIDENT

Astronomically, 1985 was dominated by a remarkable surge of public interest in a small member of our Solar System: Halley's Comet. Many members of our Society have been involved in public observation sessions, in presenting talks, and in answering numerous questions concerning the comet. One of our Past-Presidents, Dr. Ian Halliday, is Canada's representative on the Steering Group for the International Halley Watch. Two members, Warren Morrison of the Kingston Centre, and Chris Spratt of the Victoria Centre, are acting as Recorders for visual observations for the International Halley Watch. For the record, the first visual sighting of Halley's Comet from Canada was apparently by Father Lucian Kemble of the Calgary Centre; he located it on the morning of August 6 using his 280 mm reflector. Five days later Jack Newton of the Victoria Centre photographed the comet using his 500 mm reflector. On the suggestion of Dr. Helen Hogg, a copy of the 1986 *Observer's Handbook* has been placed in a "time capsule" at the Ontario Science Centre, to be opened at the comet's next return in the year 2061.

1985 marked the 95th anniversary of our Society. It was also the 50th anniversary of the David Dunlap Observatory, an institution with which The Royal Astronomical Society of Canada has had a long and close association. I represented the RASC at commemorative sessions held in Toronto on May 31, the anniversary date of the opening of the DDO. 1985 was also the 25th anniversary of the Dominion Radio Astrophysical Observatory, the complex of radio telescopes near Penticton, British Columbia, which is directed by the Second Vice-President of our Society, Dr. Lloyd Higgs.

A year ago I reported that the International Astronomical Union had named asteroids Sawyer Hogg, Millman, and Plaskett. It is gratifying to note that Asteroid 3023 has been named Heard, after the late John F. Heard, former Director of the David Dunlap Observatory and a Past-President of our Society.

On May 28, the first annual Helen Sawyer Hogg Public Lecture, jointly sponsored by the RASC, the Canadian Astronomical Society, the Royal Canadian Institute, and the Planetarium Association of Canada, was held at the University of Toronto. I had the pleasure of introducing the speaker, Dr. Owen Gingerich of Harvard University, whose address was "The Mysterious Nebulae, 1610-1924".

Four officers' positions changed hands during the past year. One of these was unexpected and unfortunate: our Treasurer, Marie Fidler, stepped down. Marie has made outstanding contributions to our Society over many years, as Executive-Secretary (from 1958 to 1972), as Treasurer, and currently, as Assistant to the Editor of the *Journal*. To complete the remainder of Marie's term as Treasurer, we were very fortunate in obtaining the services of Dr. B. Ralph Chou, well-known to members as Editor of the *National Newsletter* for the past five years. Because of the substantial additional load, Ralph relinquished the latter position, which has been taken over by Ian McGregor.

Philip Mozel completed a 3-year term as Librarian, and has been succeeded by Brian Beattie of the Toronto Centre. Special thanks are due to Phil and his committee for their efforts to have the Library open to members on weekends.

The term of the Recorder also ended in 1985; however, we were pleased that the incumbent, Leo Enright, agreed to a second three-year term. Leo also continues to contribute his talents to the Society as Coordinator of the annual Astronomy Day.

In 1985 Dr. Peter Millman's term as Honorary President ended. The year also marked Dr. Millman's completion of 60 years as a member of the RASC. During that period, in one capacity or another, he served on National Council for a total of 26 years, was President of the RASC from 1960 to 1962, and has contributed to the Society's *Observer's Handbook* since 1929. His is an outstanding record of service to Canadian astronomy. In acknowledging Council's letter of appreciation for his term as Honorary President, Dr. Millman concluded with the words: "I can assure you that my primary allegiance in science will always be to the Royal Astronomical Society of Canada."

At the 1985 Annual Meeting, Arthur Covington, a pioneer in radio astronomy, a leader in the study of solar activity, and a long-time, active member of our Society, was welcomed as our new Honorary President.

Dr. John Percy has accepted a third three-year term (1986-1989) as the Society's representative on the National Research Council's Associate Committee on Astronomy. It is through this position that the RASC has a direct voice in influencing government policy in astronomy in Canada. The

Associate Committee on Astronomy also functions as the International Astronomical Union's National Committee for Canada, and John was one of Canada's official delegates at the 19th General Assembly of the IAU held in New Delhi in 1985. We owe John a special vote of thanks for representing the Society on these influential committees. Thanks are also due to John for his patient but unsuccessful efforts to have our long-standing grant from the Ontario Government renewed.

For many decades, the RASC has had an outstanding group of Honorary Members. The group is limited to a maximum of fifteen. At the first meeting of Council in 1985, the distinguished astrophysicist, Dr. Stephen Hawking, Lucasian Professor of Mathematics at Cambridge University, was appointed an Honorary Member of our Society. In his letter of acceptance, Dr. Hawking replied: "I am very honoured that the Royal Astronomical Society of Canada should elect me as Honorary Member. I would be very glad to join such a distinguished company." Later in the year we were saddened to learn of the death of another Honorary Member, Dr. Josif Shklovsky of the Institute of Space Research in Moscow. A letter of sympathy was sent to Dr. Shklovsky's colleagues and family on behalf of our Society.

Each year the RASC presents a few awards. One of the highest of these is the Service Award, presented to a member for outstanding service to the Society over an extended period. At the General Assembly banquet, Cam Fahrner of the Calgary Centre received this award. The Simon Newcomb Award, for literary ability, was won by Donald Trombino, a member from the United States. The Society's Gold Medal, awarded for outstanding academic achievement in the undergraduate astronomy program of the University of Toronto, was won by Gordon Alan Drukier. Other awards presented during the year included Membership Certificates (eight in the Toronto Centre, three in the Sarnia Centre), and Messier Certificates (two in the Toronto Centre, three in the Montreal Centre).

Once again our Society has supported the annual Canada-Wide Science Fair by providing prizes to young people for astronomy-related projects. The Fair was held in Cornwall, Ontario, last May, and Ken Tapping of the Ottawa Centre represented the Society. First prize was awarded to Peter Brown of Fort McMurray, Alberta (Mr. Brown was also a first-place winner in 1984). Brad Baker of Kingston, Ontario, and David Luttmann of Victoria, British Columbia, were the second and third place winners. All three received memberships in the RASC.

The 1985 General Assembly was held in Edmonton on the campus of the University of Alberta at the end of June. The weather was superb, and to the credit of Bob Carson, Tony Whyte and their committee, the organization was excellent. Only those who have been directly involved in the planning of a GA fully appreciate the time and effort required, and the feeling of accomplishment. In addition to the various meetings, papers sessions, and display competition, delegates were treated to many of the delights of the city of Edmonton, including its new subway system, the Citadel Theatre complex, the Convention Centre on the bank of the North Saskatchewan River, Fort Edmonton Park, West Edmonton Mall, and the spectacular Space Sciences Centre with its planetarium and IMAX theatre. At the banquet, Dr. R. Folsinbee, Professor Emeritus of the University of Alberta, delivered a fascinating talk on the recovery of meteorites.

In recent years governments, educational institutions, and many other organizations have been experiencing increasing financial difficulties. The RASC is most fortunate in being in sound fiscal condition; however, our assets are not large and we are continually struggling not to incur annual deficits. The greatest single source of revenue (about 43% of the revenue) for the Society is its *Observer's Handbook*, with membership fees and *Journal* revenue (the latter including the annual federal grant) contributing almost equally at about 23% each. The remaining 11% of revenue comes from rent, interest, etc.

The greatest single source of expenditure (about 43%) is the combined *Journal*, *National Newsletter*, and *Annual Report*. The administrative expenses for the National Office plus benefits to Centres are a close second at about 37%. The remaining 20% of expenditures are associated with the *Observer's Handbook*.

When revenues and expenditures are combined, our four publications (considered as a group) are approximately self-sustaining; the *Observer's Handbook* carries the *Journal*, *National Newsletter*, and *Annual Report*. Of the remainder, the combined membership fees, rent and interest income carry the National Office and benefits to Centres.

In these times it would be irresponsible not to adjust *Journal* subscription rates, *Observer's Handbook* prices, rental income, membership fees, etc. to compensate for the steadily shrinking value of the

dollar. The price schedule of the *Observer's Handbook* has been adjusted during each of the past five years, but, at the other extreme, membership fees have been fixed during that same period. Council has proposed a fee schedule for the next membership year which will bring the fees up approximately to the value they had in the fall of 1981. (The proposed regular membership fee is \$25.) The new fee schedule will be brought to the 1986 annual meeting for ratification.

Excluding the building at 136 Dupont Street, the Society has assets of about \$200 000, or only about \$70 per member. At its meeting on January 25, 1986, Council began procedures to mount a campaign to increase the Endowment Fund of the Society. With careful planning, such a campaign could do much to ensure the long-term financial health of the Society.

During my term as President, I have visited more than half of the Centres of the Society. The many activities of the Centres are documented in this Annual Report, so I shall say simply that it has been a tremendous experience to meet many of the people who are truly "lovers of astronomy" across our great country. I have been privileged to speak at their Centre meetings, visit their homes, stand in their observatories, and hear of the many and varied activities pursued by these widely-scattered groups in furthering astronomical understanding. As Dr. C.A. Chant wrote 46 years ago: "The service rendered to Canada by our chain of organizations across the land cannot be calculated. They help to keep raised high the torch of pure learning in this world of turmoil and war and they minister directly to the education, culture and happiness of the people."

In addition to the officers and councils of each of the twenty Centres of the Society, the operation of the RASC involves the efforts of not only an Executive-Secretary and some eight officers and three editors, but also a National Council which, in addition to the officers, includes twenty-three representatives from the various Centres across Canada. Much of the work of Council is handled by eleven standing committees and (at present) five *ad hoc* committees, each with a chairman and several active members. I wish to extend my sincere appreciation to all of these individuals, and particularly to Rosemary Freeman, for their invaluable assistance and support during the past two years. It has been a great honour to serve as President of The Royal Astronomical Society of Canada.

ROY L. BISHOP, *President*

REPORT OF THE NATIONAL SECRETARY

The Centre reports which follow should be required reading for all those actively involved in preparing, planning, and promoting astronomy programs. The large number of members with expertise in a great variety of areas, and the willing help given by so many in raising the general public's interest in astronomy, shows clearly the vitality which drives our venerable Society onward.

This vigour is also reflected in the membership figures which show a healthy gain almost to the record levels of the year 1981.

	1984	1985
Calgary	142	192
Edmonton	121	103
Halifax	112	78
Hamilton	68	56
Kingston	38	37
Kitchener-Waterloo	16	22
London	42	36
Centre Français de Montréal	36	43
Montreal	96	96
Niagara	53	44
Ottawa	181	213
Québec	76	54
St. John's	12	12
Sarnia	22	22
Saskatoon	36	44

Toronto	742	825
Vancouver	83	116
Victoria	127	145
Windsor	34	43
Winnipeg	45	44
Unattached to Centres:		
Canada	264	264
United States	352	354
Overseas	58	57
Honorary	14	14
	<hr/>	<hr/>
	2770	2914

Thanks are due to our Executive Secretary, Rosemary Freeman, for compiling these figures, and for her valiant work during the course of the year.

The Society gratefully acknowledges the financial support of the *Journal* by the Natural Sciences and Engineering Research Council of Canada.

PETER BROUGHTON, *National Secretary*

EDMONTON CENTRE

The year 1985 proved to be exciting and very active for the Edmonton Centre. The first regular meeting of the year was also the Annual Meeting and was held on the second Monday evening in January, at which time a new slate of officers for the new season was approved. At this meeting, the President's Award was presented by Anthony Whyte to Mel Rankin, Edmonton Centre's treasurer and national representative.

During the months of February, March, and April, many Centre members attended nine astronomy lectures which were held in the Devonian Imax Theatre within the Space Sciences Centre and presented by distinguished speakers from various parts of North America.

Centre members also participated in two Starnights which were held on the grounds of the Space Sciences Centre.

Observing sessions were organized by the observer's group co-ordinator, Peter Ceravolo at a site within Elk Island National Park which is situated east of the city of Edmonton. This site is in an area where, along with elk and coyotes, the deer and the buffalo roam. It was not unusual to encounter a herd and sometimes two separate herds of buffalo resting along the side of the park road. Their beady eyes, like the stars above, glistened as they reflected the car's headlights when the observers drove cautiously by to the observing site. It has been reported that buffalo have also checked out the site when observers had their telescopes set up to observe. A highlight for observers over the last few months of this season was finding and observing various comets, including Halley and Giacobinni-Zinner. The Edmonton Centre has purchased two excellent eyepieces, which greatly enhanced viewing through the Centre's telescope.

At regular meetings held this year, Alan Dyer, executive director of programming with the Space Sciences Centre has kept the Centre informed with up-to-date coverage of the showings at the Edmonton Space Sciences Centre.

Craig Makarowski, editor of the Centre's newsletter, STARDUST, has done another great job this year of compiling items covering observing experiences and other interests related to astronomy and then getting the issues off to the members.

At the February meeting a Messier Certificate was awarded to Bryce Heartwell for observing the required number of Messier objects. Bryce also being an ardent astrophotographer has taken many beautiful photographs of deep-sky objects.

The highlight of this year for the Edmonton Centre was the hosting of the 1985 General Assembly, which had its setting on the University of Alberta Campus. Under the capable chairmanship of Anthony

Whyte, the members of the various planning committees arranged a warm welcome for the delegates who arrived from many parts of the continent.

Edmonton Centre took great pleasure in playing host and were pleased that many amateur and professional astronomers, including some unattached members, were able to attend and take part in the paper sessions chaired by Dr. Douglas Hube, in the various social events, and in visiting points of interest, including Edmonton's Convention Centre, Space Sciences Centre, Fort Edmonton Park and West Edmonton Mall.

In the month of March, Dr. Douglas Hube reported that a meteor, or possibly three fireballs had flashed across the daytime sky in northeastern Alberta. Mark Zalcik kept the Centre informed about the Grovedale Meteorite which had also fallen north of Edmonton in the previous year, but was still searched for.

Our Centre's librarian, Vince Cottrell, has done a good job of organizing our lending library containing books and publications related to astronomy. New bookcases, purchased by the Centre, complement the decor of the classroom in the Space Sciences Centre where the library has been set up. This year a further supply of books was donated to the growing library. The paid up membership for our Centre reached the total of 103.

In addition to council meetings held during this season, our Centre has held ten regular meetings which were held in the classroom of the Edmonton Space Sciences Centre. The speakers and the topics presented are as follows:

- January 14 Paul Williams of the Central Alberta Regional Science Fair Society spoke in regard to the educational purposes of these fairs.
- February 4 Karl Miller, Vancouver Centre's vice president, exchange speaker and national representative – "Computerizing a Telescope."
- March 11 Dr. John Eddy from the National Centre for Atmospheric Research in Boulder, Colorado, U.S.A. – "Solar Activities and Climate."
- April 1 Andrew Lowe, Calgary Centre's exchange speaker – "The Twin Eclipses of 1984." Beautiful slides of the trip through Indonesia and Australia were also presented.
- May 13 Anthony Whyte – "Comets Which Have Been Observed Since 1577." Slides were used to illustrate.
- June 10 Review of the 1985 General Assembly's tentative itinerary by Robert Carson and reports by the chairman of the planning committees.
- September 9 Potpourri Night – Edmonton Centre members
 1. Bryce Heartwell showed slides of Messier objects he had taken.
 2. Vince Cottrell showed slides he had taken of various sunrises and sunsets, including a unique, coincidental shot of a balloon eclipse of the sun.
 3. Craig Makarowski gave a talk about the changes and refinements he had made to his tripod and telescope's motor drive.
 4. Anthony Whyte gave reviews on a number of Comet Halley books.
- October 21 Alan Dyer presented "Comet Halley" in the Margaret Zeidler Star Theatre in the Space Sciences Centre.
- November 11 "Observing Techniques" – by Edmonton Centre members
 1. Bryce Heartwell showed slides he had taken of various deep-sky objects.
 2. Russ Sampson – "Astrophotography Tips."
 3. Peter Ceravolo – "Deep-sky Observing with the Centre's Dobson Telescope."
- December 9
 1. Bryce Heartwell – "Prime Focus Astrophotography."
 2. Anthony Whyte – "Observations of Planets."
 3. Dr. Douglas Hube – "Spectroscopic Binary Research at the Dominion Astrophysical Observatory – Victoria"

At the conclusion of these regular meetings, Audrey Loehde, our social convener, could always be counted on to faithfully provide delicious refreshments which were greatly appreciated by members and guests.

HALIFAX CENTRE

A successful year of activity was carried out under the direction of our President, Dr. Norman Scrimger. Meetings continue to be held at the Nova Scotia Museum. Our membership is gradually increasing, and for the first time it went over the 100 mark.

During the year a policy of having observing nights listed in advance for the whole year was implemented, with each of the six issues of "Nova Notes" having a reproduction of a calendar for the entire year on the inside of the back cover, with the proposed events designated for the year. This system was found to be beneficial, and will be continued.

Most of the observing was carried out at the Uniacke House site, under the direction of Observing Chairman Gordon Hawkins. Special emphasis was placed on the Virgo Cluster of Galaxies in the spring, and on Halley's Comet in the fall.

During the year Dr. Wm. Thurlow and Dave Chapman received their Messier Certificates. Congratulations were heartily offered to these two members.

We were again honoured to have Dr. Roy Bishop of Acadia University as National President.

A special invitation was extended to the public for the April meeting, the subject of which was "Halley's Comet", with Dr. Bishop giving the lecture. Our May-June issue of "Nova Notes" was especially devoted to the Comet, and it was distributed free to the public on this and other occasions. There were 73 present at the meeting of whom 45 were visitors.

Our Annual Banquet held in May was well attended, with 42 present. At this function, Murray Cunningham, M.D., was installed as our new Honorary President, he being the third to hold this office. He gave a talk, illustrated with slides, on "Early Years of the Halifax Centre."

Also in May a group of members visited the Desbrisay Museum in Bridgewater, where a meteor and meteorite display on loan from NASA had been set up by the Lunenburg County Astronomy Club. Wilf Morely and Darrin Parker were in charge of this. An illustrated lecture entitled "Meteors and Meteorites" was given by Dr. David Turner of St. Mary's University. Because of cloudy sky, a film from NFB was shown in lieu of planned observing. A number of local residents also attended.

The June meeting was held at the Planetarium, which is located at Dalhousie University, and is on loan from the N.S. Museum. Pat Kelly took us to the Southern Hemisphere, and this was followed by an illustrated talk by Darrin Parker, our National Representative, on his proposed presentation to the G.A. at Edmonton later in the month.

The camping and observing weekend in August was held at Kedgemakujik National Park, and it was highly successful, with good skies. As part of the activity, public viewing was held for park visitors, about 200 of whom were accommodated. Total attendance by members and their families was 21.

In October our Nova Scotia Astronomy Day was held at the N.S. Museum. There were 11 displays, probably the most interesting being the planetary system to scale on the longest wall of the room, done by Pat Kelly, our "Nova Notes" Editor.

In December we had a public viewing of Halley's Comet at the Halifax Exhibition Park on the Prospect Road. In spite of only moderately good skies, 500 people were able to see the comet.

Also in December a farewell party was held at St. Mary's University for Randall and Diane Brooks who are leaving for England, where Randall will do further study in Astronomy, particularly on the historical aspect. Randall, presently Treasurer, has held all of the Executive offices over the years, and was most active in the organization of the arrangements for the 1975 and 1985 G.A.'s, both of which were held at Saint Mary's University. We shall all have to work harder on Centre activities with him not here.

Library facilities were improved by the Librarian, Dave Chapman, during the year.

Dr. Scrimger was a judge at the Halifax County Regional Science Fair.

The Lunenburg County Astronomy Club also had public observing of Halley's Comet, and attracted 150 people.

Lectures on Halley's Comet were given to Cubs, Brownies, and students by Dr. Scrimger, Walter Zukauskas of Dalhousie Univ., and Vice-President Cathy McLeod.

A C-8 telescope, recently purchased by the Centre, will be for the use of members.

A list of principal events, with speakers, is as follows:

- January 18 Meeting. "Stellar Evolution" Dr. Norman Scrimger, and film "Star Life."
- February 15 Meeting. "Astro-Photography" David Chapman of DREA and Gordon Hawkins.
- March 15 Meeting. "Charged Coupled Devices (CCD's)" Dr. Gary Welch, Saint Mary's Univ.
- March 16 Observing of Galaxies, Uniacke House.
- April 19 Meeting. Public especially invited. "Halley's Comet" Dr. Roy Bishop, Acadia University.
- April 20 Observing. Uniacke House.
- May 10 Annual Banquet, Princess Restaurant. "Early Days in the Halifax Centre" Dr. Murray Cunningham, Honorary President.
- May 18 Meeting with Lunenburg County Astronomy Club, Desbrisay Museum, Bridgewater. "Meteors and Meteorites" by Dr. David Turner, Saint Mary's Univ. and Display on loan from NASA.
- June 21 Meeting at Planetarium, Dalhousie Univ. "Southern Skies". Pat Kelly, TUNS. Darrin Parker, National Rep. described his proposed presentation for the G.A. Trivia Contest followed. (Astronomical.)
- July 13 Observing at Uniacke House.
- August 9-10-11 Camping/Observing Weekend, Kedgemakujik National Park.
- September 7 Observing at Uniacke House.
- September 20 Meeting. "Cosmology." Tina Harriott, Mount St. Vincent Univ.
- October 18 Nova Scotia Astronomy Day. N.S. Museum.
- November 9 Public viewing of Halley's Comet at Uniacke House. 100 persons viewed it.
- November 15 Meeting. "Astronomical Sites in China." Murray Cunningham, M.D., Honorary President.
Report on the 1985 G.A., Edmonton, by Darrin Parker, National Rep.
- December 6 Public viewing of Halley's Comet. 500 persons accommodated.
- December 13 Get-together for Randall and Diane Brooks at Saint Mary's University.

RALPH FRASER, *Secretary*

HAMILTON CENTRE

The Hamilton Centre has enjoyed a busy and eventful year. The highlights of the General Meetings were as follows:

- January Annual Meeting
- February Dr. Derek Ford, McMaster University, "Why is the Earth Plate Tectonic?"
- March Dr. Peter Sutherland, McMaster University, "Supernovae"
- April Dr. Marshall McCall, University of Toronto, "Chemistry of the Galaxies"
Mr. John Feild, Hamilton Centre, "Big Bang Theory"
- May Mr. Peter Jedicke, London Centre, "The Canadian Role in the U.S. Program to build a Space Shuttle"
- June Members' Night
- September An informal evening at the Hamilton Centre's observatory
- October Mr. Jim Winger, Hamilton Centre: A demonstration of the planetarium at McMaster University
- November Dr. J.R. Valentine, Canada Centre for Inland Waters, "Pollution"
- December Mr. Jim Winger, Hamilton Centre, "Halley and his Comet"

The General Meetings also included various presentations by our own members as well as examples of their astrophotography. Particularly memorable in this year of the comet were the slides of Comet Halley taken regularly since September by Mike DeVillae. He has kept us up to date on the progress of the comet and has generously allowed his slides to be used for public education.

An important goal this year was to complete the second building on the observatory site. We are

pleased to report that it is now close to completion. It is of roll-off roof construction and will house the Centre's 6", 10", and 17½" reflectors. This achievement is to the credit of the many who have served on the building committee and work parties under the leadership of John Feild and Rob Allen. Bob Speck has spearheaded the fundraising drive without which the building could not have been brought to completion.

We expect our observing facilities to be in great demand. Our membership is growing steadily, from 56 last year to a present total of 87. Comet Halley has sparked a greater public interest in astronomy which in part accounts for the increase in membership. However, other efforts by Centre members have also contributed to the higher profile of the Hamilton Centre in the communities of this area. Ian Stuart has conducted a publicity campaign with gratifying results. Bob Speck and a hard-working committee have introduced mall displays into the repertoire of Centre activities. These efforts have resulted in a high demand for tickets to the public nights which are held twice a month at the observatory. We presently have a growing waiting list and are considering expanding our public education programme. Close to 1,000 people have benefited from this programme through attendance at public nights conducted by Ian Stuart, at children's events held by John Gauvreau, and from talks given in schools by a Centre representative. Included in these public events was a memorable visit by Steve Dodson and the Ontario Physics Teachers. Steve set up his home-built and well-travelled 22" telescope at our site for the benefit of the teachers and Centre members.

Equally memorable was a visit to the observatory by John Dobson of Dobsonian mount fame, at which time a number of members enjoyed a lively discussion with him on the theories of the origin of the universe. Centre members have also participated in activities elsewhere such as the Stellafane Convention, the Syracuse Summer Seminar, the summer gathering of the North York Astronomical Association at River Place, meetings of the Niagara Frontier Council of Amateur Astronomical Associations, and of course the General Assembly in Edmonton.

Other noteworthy activities for the year include the publication of eight editions of "Orbit". Rob Allen has made "Orbit" more completely a Centre production with the emphasis on articles and reports by our own members. Mike DeVillaer hosted four seasonal star parties. John Feild revived the discussion group. Honorary President Norm Green made several generous donations of periodicals and sky charts to the Centre library. Needless to say there were numerous informal gatherings at the observatory with members taking advantage of clear skies whenever possible.

On a sad note, we were grieved by the passing of charter member Les Powis. Les is greatly missed and will be remembered for many things including his years of hard work in many areas of Centre life. Long time Council member Eric Orr has retired and Centre members would like to express their gratitude to him for his dedication to the Centre.

As 1986 begins we are looking forward to one of our busiest years ever. Our goals include putting the finishing touches to the observatory, continuing the fund raising campaign, meeting the public demand for our educational services, and conducting an introductory course for new members.

TONI QUINN, *Secretary*

KINGSTON CENTRE

The passing of a year leaves its array of memories and events; here are a few from 1985.

Our compliments to Warren Morrison, Kingston Centre member in Peterborough, for his detection of a rare outburst of RS Ophiuchi in January 1985. This outburst is only the fifth recorded for this particular object.

Still commanding our attention early in the year was Comet Levy-Rudenko 1984t, its position recounted by many members of our Centre. David visited our Centre, from his home in Tucson, to give us a personal account of his comet discovery which delighted Kingston members.

Ushering in Comet Halley in the Kingston area was science writer Terence Dickinson and Kingston member Martyn McConnell with a viewing session of the comet on the night of September 12/13. Planned activities centered around the comet included arranged sky viewing for the public at Fort Henry Hill but poor viewing conditions reduced the enthusiasm and excitement of seeing such a famous comet that appeared so faint.

Hein van Asperen brought double honour to our centre from the 1985 Edmonton General Assembly

where he presented his paper, *Determination of Sunspot Latitudes*, and also won a prize in the Display Competition with his Solar Observing Project. A paper on comet-searching was also presented in Edmonton by our Vice-President David Levy.

A memorable event of the year was the unveiling and dedication of an historical plaque commemorating the first optical observatory in Ontario built in 1855 in Kingston City Park. All that is left of the original structure in the city park are four limestone cylindrical stones which upheld the six and one-quarter inch telescope. Among the guests at the ceremony were Queen's Emeritus Professor Dr. A.V. Douglas described as "dean of all of us astronomers".

1986 marks the 25th year of our founding. In celebration of our 25th Anniversary, our Centre has created its first major award and named it in honour of our founder and present Honorary President, Dr. A.V. Douglas. The *Dr. A. Vibert Douglas Award* may be given annually to a Kingston Centre member for service and/or an astronomical achievement.

Various members of our Centre took part in our evening presentations, as follows:

Murray Anderson, Interplanetary Trajectories and the Rocket Equation; The Rocket Equation – Part II.

Hein van Asperen, Determination of Sunspot Latitudes; Travelogue of G.A. in Edmonton.
Jocelyn Boiley, Space Ships and Travel.

Leo Enright, Slides of Aurora and Zodiacal Light; Travelogue of G.A. in Edmonton; Stellafane 1985; Satellites of Saturn; The Recording of Observations; The *Observer's Handbook 1986*.

Robert Heaton, The Neutrino Problem.

Terry D. Hicks, The Astronomical Position-Marine Navigation Part II.

Martyn McConnell, S.E.T.I.

Special Guest Speakers:

Dr. Chau Wai-Yin, Mysteries of the Universe

Peter Jedicke, The Canadian Participation in the American Planned Space Station.

Rolf Meier, Galaxies and Supernovas.

David Levy, The Discovery of Comet Levy-Rudenko 1984t.

Dr. David Hanes, Globular Clusters and Intergalactic Distance Scale.

Peter Broughton, Historical Aspects of Comet Halley.

SUE KNIGHT SORENSEN, *Secretary*

LONDON CENTRE

The London Centre continued holding its meetings in the Medical Sciences Building at The University of Western Ontario in 1985.

Meetings were as follows:

- January N.F.B. film night
- February Robert Jedicke on the Development of Cosmological Systems
- March 15 Members night
- April 19 Astrophotography by Mark Sinkins
- May 17 Dr. Derek Ford "Why is the Earth's Plate Tectonic? A comparative review"
- June 21 Dr. Jack Mack on "Black Holes"
- July 19 Leo Enright on Zodiacal Light
- August 16 Centre Observing Session
- September 20 Dale Armstrong on Observatories and Planetariums of the western U.S.A. and Canada
- October 21 Observing Deep Sky Objects; A discussion by Paul Brown and Alister Ling
- November 15 A discussion on Buying or Making Telescopes, N.F.B. films, Alister Ling presenting slides on Atmospheric Phenomenon, Joseph O'Neil showing his Hand Guider plus a visit to the Hume Cronyn Observatory
- December 20 Video of Comet Halley's return and a discussion on Planetary Observing

J. KAY, *Secretary*

CENTRE FRANÇAIS DE MONTRÉAL

Rapport du SECRETAIRE

Le C.F. de Montréal de la S.R.A.C. comptait 43 membres en 1985. Ces membres se regroupant au sein de la Société d'Astronomie de Montréal ont pu participer aux activités et bénéficier des services offerts par celle-ci.

Causeries et conférences: Pas moins de 48 causeries et conférences ont été offertes en 1985. Les conférences ont lieu le premier mardi du mois au Planétarium Dow de Montréal où un astronome professionnel y vulgarise un sujet astronomique de pointe. Le Dr Pierre Bastien (président en 1985) est responsable de ce programme. Les causeries se tiennent tous les autres mardis dans nos locaux du Centre St-Mathieu. Des amateurs communiquent alors leurs expériences et connaissances à leurs collègues et au public. Nous tenons à souligner le travail de M. Gilbert St-Onge qui anime une réunion des observateurs tous les derniers mardis du mois. De plus, nous avons souligné le retour de la comète Halley avec une conférence et trois causeries sur ce sujet particulier.

Exposition: Le comité des expositions sous la direction de Mme Huberte Palardy, vice-présidente, a créé en 1985 un Kiosque ayant pour thème "Le retour de la comète Halley". Les membres du comité et leur Kiosque ont participé à plusieurs activités à travers le Québec (Expo-Science, Journée Internationale de l'Astronomie, Congrès de l'AGAA, . . .) pour promouvoir l'astronomie auprès du public.

Recompences: M. Marc Gélinas, le trésorier, a été honoré du prix pour la meilleure conférence lors du congrès de l'Association des Groupes d'Astronomes Amateurs du Québec en 1985. Il a aussi reçu le prix "L'Etoile d'Argent" décerné par la Société d'Astronomie de Montréal pour l'ensemble de son travail. M. Gilbert Ouellette a reçu le prix "Henri Simard" pour la qualité de la fabrication de ses télescopes.

DIANE CARPENTIER, *Secrétaire*

NIAGARA CENTRE

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

- January 24 Annual Meeting, election of Directors. After this, Bob Winder showed some new slides about his work on the 26" mirror, and Charles Fassel conducted a Constellation Quiz, won by Bob Winder with 46 out of 55 correct.
- February 28 Film Night; shown were: "To the Edge of the Universe", "The Astronomer" and "The Solar Atmosphere", all from the National Office's Film Library.
- March 28 Speaker: Tom Dey (Rochester) on "The Aesthetics of Constellation Photography".
- April 25 Speaker: Robert Jedicke (London) on: "The History of Man's Conception of the Universe".
- May 23 Speaker: Joady Ulrich (Windsor) on: "Our Milky Way Galaxy".
- September 26 Speaker: Dr. Roy Bishop on: "The Rainbow, an Atmospheric Phenomenon of the Third Planet" (with demonstrations).
- October 24 Speaker: Ken Brown (Rochester) on: "The Gems of Germany", a description of the many antique astronomical instruments preserved in that country's museums.
- November 28 Members' Night: Slides shown by members, with as main subjects Comets and Constellations.

There was no meeting in December, as our regular date fell on Boxing Day this year. The Fassels invited everyone to a "Solstice Party" on December 21, which was a great success.

Our Spring Banquet was held on April 12, with as our Guest Speaker Dr. James Osgren (Buffalo), whose subject was: "Astronomy of the early 20th Century".

The combined Fall Meeting of the NFCAA and the Fall Banquet were held on November 9, with Mrs. Mary Grey (Ottawa) as Guest Speaker. Her subject: "Astronomy at the National Museum of Science and Technology, and Educational programs for young people in Astronomy".

Observers' Group Star Nights have been called this year again on clear nights and short notice, with good results. The dates were: February 19, March 20 (Messier Hunt), May 21, July 16, August 11 (Perseids), December 3. That there were only six, shows the kind of weather we have had here this year.

Public Star Nights and Mall displays:

April 26 Niagara Square (Astronomy Day)
 May 24 John Allen Park
 June 28 Niagara Square
 July 26 John Allen Park
 August 23 Seaway Mall
 September 20 John Allen Park

And for Halley's Comet:

November 20 Fort Erie Public Library
 December 13 John Allen Park, good attendance but cold
 December 20 John Allen Park, clouded out

There were four meetings of the Board of Directors in 1985.

The Centre again assisted Dr. John Black of Brock University by supplying telescopes for the observing night of his Astronomy Course, in early October.

The display at the Central Library in St. Catharines in April was again a success, and can definitely be called an annual event now.

W. JUTTING, *Secretary*

OTTAWA CENTRE

Membership The Ottawa Centre had 213 members in 1985, including 32 life members. This is 32 more than in 1984 and 46 more than in 1983. For the first time since 1981, the Centre had two representatives on the National Council.

Public Meetings The Council sponsored six public lectures during the year.

In January Ken Tapping gave a talk on "Solar Very Long Base Interferometry – Looking Inside Solar Flares". In February, Paul Feldman introduced a film on the well-known British mathematician and cosmologist Stephen Hawking. In March Jeffrey Hayes of the Department of Physics and Astronomy, University of Maine, spoke on double elliptical galaxies. This talk was taped by Ottawa Cablevision. A Centre meeting in April was hosted by the Observers' Group. Later in the year, a particularly interesting talk was given by Real Manseau from Drummondville, Quebec, who has won so many prizes at Stellafane for his fine work making historical instruments in brass, such as theodolites, tessaracts and a tellurium-lunarium. The Centre was also fortunate in having been able to arrange for a talk by Grote Reber, the well-known radio astronomer. The subject of this talk was the "Origin of the Universe".

General The Council held five meetings during the year. A major issue discussed was Astronotes. It became necessary early in 1985 to make new printing arrangements, both for the address labels and for Astronotes itself. Frank Roy volunteered the services of his computer to handle the labels and a commercial printing firm was engaged to print Astronotes. This, together with an upward revision of insurance coverage at the Observatory and an increase in postal rates to 34¢, resulted in considerably higher expenditures during the year. As a result, Council spent some time discussing finances. Budgets for both 1984–85 and 1985–86 were prepared and reviewed. The latter revealed that careful attention to expenditures, generous support from sustaining members' donations, and increased

membership would enable the Centre to break even without raising fees. Other major subjects addressed by Council included the Annual Dinner, the Centre's program, participation in public events and, of course, activities planned for Comet Halley. A Comet Halley Activities Co-ordinating Committee, consisting of Messrs. Rob McCallum, Rolf Meier and Brian Burke, was established. Finally, in an effort to keep better records of the Centre Library, Frank Roy put on his computer a complete list of all 400 books owned by the Centre.

Early in the year the Council approved a questionnaire to be sent to all members, in an effort to find how to better serve their needs. A total of 42 were completed and returned, a participation rate of close to 25%. The majority of respondents felt that the Centre was doing a good job and some constructive suggestions were made. One of these was that much more attention should be devoted to new members and activities should be organized specifically for their participation. It was surprising to learn that a large portion of the membership is more interested in the solar system than in deep sky and more esoteric subjects. A general interest in astrophotography was confirmed but there is also, apparently, a larger than expected interest in computers in Astronomy. Some members expressed disappointment about the quality of articles in Astronotes. Council wishes to thank those who took the trouble to complete the questionnaire. The advice has been taken to heart; several beginner's events have already been held and more are planned. It will take time to change our ways, but we're working on it.

On Astronomy Day (April 27th) five members of the Centre took part in the National Museum of Science and Technology's program as discussion leaders or lecturers. Another six of the discussion leaders, from the National Research Council, were also Centre members. Another group of members set up a display at the Merivale Mall. That evening an observing session was held for the public on the grounds of the Museum. This was well attended, even though the skies were not very clear.

The President attended the General Assembly in Edmonton on June 28-30. Closer to home, at Springfield, Vermont, a large delegation of members attended the Stellafane convention on August 16-17, where Max Stuart exhibited another of his fine telescopes. Congratulations to Donna Kourtessis, who won five awards at the Ottawa Science Fair held on April 12th. Congratulations, also, to Art Covington on being appointed Honorary President of the RASC. He replaces Peter Millman, another Ottawa Centre member.

The President gave a half-hour interview on Ottawa Cablevision, in which he outlined the activities of the Centre. The interview was conducted at the Indian River Observatory and shown on three nights in September. Sandra Ferguson was also featured in the program, looking through her home-made Dobsonian. Sandra was again in the public eye when, together with Doug George, Max Stuart, Frank Roy, and three other members, she appeared in full colour on the front page of Section B of the Ottawa Citizen of August 12th. On this occasion all were wrapped in sleeping bags watching the Perseid meteor shower at IRO.

The Annual Dinner Meeting was held at Algonquin College on November 22nd. Awards were presented by Jack Locke to David Lauzon, for the best Astronotes article, and to Paul Comision for Observer of the Year. The speaker was Dr. Bob Thirsk of the Canadian Astronaut Program.

In connection with Comet Halley, the Special Activities Coordinating Committee referred to earlier, prepared a 20-page booklet called "Observing Halley's Comet from Ottawa". This contains eleven sections covering a variety of topics such as how to observe the comet and what instruments to use, how to photograph it, what are comets, and a set of four maps for locating the comet. One thousand copies were printed by the Citizen at no charge and the booklet is being distributed free to members, local schools and the general public. The response was overwhelming and 500 more copies had to be printed late in December. Clearly many more will be required in 1986. Unfortunately, one of the media outlets did not mention that a stamped, self-addressed envelope should be included with each request. As a result some Centre members are hand delivering hundreds of booklets in the Ottawa area and the Centre is stuck with at least 100 mailings to out of town locations at 51¢ each.

Other Comet Halley activities included a talk by Doug George at the Nepean Library in the second week of November and a public comet night at Ramsayville School on November 15th, which attracted an estimated 700 people. Unfortunately, the last quarter of 1985 has been characterized by a much higher incidence of cloudy skies than normal, so that observing and photographing the comet has been difficult. The Centre has conducted an active publicity campaign warning people against buying expensive telescopes just to view the comet. Also the public is being cautioned to beware of exaggerated

instrument capability claims by vendors, particularly with respect to magnification. A letter by Doug George to this effect was published in the Citizen on November 2nd and a number of talks have also been given over the radio.

Observers' Group The Observers' Group under its Chairman, Doug George, held regular meetings on the first Friday of every month in Room 3001 of the NRC building at 100 Sussex Drive. The meetings were generally well attended, with a few at standing room only. Comets were, of course, a big attraction for observers this year. With Halley approaching, attention was first focused on comets Giacobini-Zinner and Hartley-Good. Both were quite bright. Comet Halley was first seen at IRO by Rolf Meier, on August 21/22 at 14th magnitude. It brightened very slowly, and appeared dimmer than expected throughout September. After that it brightened much more quickly.

The observing season began when four members braved -30° weather one early January morning, to see a spectacular Quadrantid meteor shower. Also observed were the April and June Lyrids, the Perseids in August and the Orionids in October. The Observers' Group organized the first annual Messier Marathon on March 22 to 24. Many members participated and achievement certificates were presented.

The first public starnight took place at Andrew Haydon Park on May 24th. This was followed by a particularly successful starnight at Vincent Massey Park on July 26th. The annual starnight for the Mississippi Valley Conservation Authority was held on August 21st. The annual picnic was hosted by Immi Underwood on September 15th. The fun included a pot-luck barbeque and, of course, observing. Another Vincent Massey Park starnight followed on the 18th. Unfortunately the Deep Sky weekend at Thanksgiving was Deep Cloud most of the time.

Taking a hint from the questionnaire referred to earlier, the Observers' Group organized the first of a series of beginners' meetings on November 17th. Twenty-five interested novices learned the basics of observing and telescopes. Thanks to the Museum of Science and Technology for the use of the Auditorium. Max Stuart conducted telescope making workshops at his home and Brian Burke continued to organize lunar graze observing expeditions.

This year witnessed the completion of the Centre's new pulse-counting photometer, built by Frank Roy, Jim Zillinsky and Doug George. When adjustments, calibration and testing are finished, it should provide a new focus for members' variable star work.

Indian River Observatory After an unusually dry and warm autumn to close out 1984 – the first snow did not fall until December 1 – the first six weeks of 1985 were a virtual deep freeze. Despite temperatures between -20° and -27° and wind chill touching -40° , the number of people visiting the Observatory totalled 14 for January and February, compared with only 9 in the same period in 1984. Overall, in 1985 there will be a substantial increase in total Observatory usage over the previous two years, due largely to the Messier Marathon, generally better viewing conditions, better publicized and, consequently, better attended star parties and, of course, the presence of Comet Halley during the last quarter of the year.

The clubhouse lock was changed on April 2 and 17 keys given out. Keyholder fees were held at \$25.00 per year, including a \$1.00 refundable key deposit.

The most conspicuous improvement to the premises this year was the construction of the new outhouse by a special task force consisting of Sandra Ferguson, Robin Molson and John Molson. Malcolm Lambourne helped to set it up in a permanent location and also donated a half dozen patio stones, which serve as a base. Thanks are also due to Brian Underwood who repaired the old outhouse so a facility was available while construction was in progress.

Maintenance work and groundskeeping chores were carried out by various members, whose help is gratefully acknowledged. Fred Lossing washed the mirror, Robin Molson tarred the roof, while Immi and Brian Underwood and Rob Newton cut the grass at various times. Our thanks also go to Rob Dick for donating copies of Sky and Telescope to the Observatory and to Stan Mott who donated a number of books, a welcome addition to the growing amount of reference material available at the Observatory. A refrigerator has been donated by Bill Dey and a set of seven $1\frac{1}{4}$ " orthoscopic eyepieces was donated by Paul Comision.

As part of a review of insurance coverage, an inventory was taken of the IRO buildings and their contents and an attempt made to evaluate them. Estimated figures for depreciated value and replace-

ment cost were accepted by Council at its meeting on September 23rd. Replacement cost of the facilities is estimated at just below \$40,000.00.

Although it has been a quiet year for the radio telescope at IRO, some progress was made. All the cabling from the first combiner was replaced with low-loss RG-8U coax, resulting in a S/N improvement of 1.2 dB per antenna. In all, 30 meters of cabling was replaced. Also, we moved our operating frequency from 244 MHz down to 238 MHz. This change alone noticeably improved sensitivity.

Plans for 1986 are to replace the 500 K front end pre-amps with 75K low noise GaAFET's. Theoretically, this should make all 3C sources observable.

The Centre records with regret the death of James Hargreaves at Ayer's Cliff, Quebec. Jim had donated a large collection of instruments and equipment to the Centre.

In retrospect, 1985 has been a year of considerably increased activity largely due to higher membership, the return of Comet Halley and better use of the media. The latter resulted in a more significant public response to Centre sponsored activities. The Council acknowledges with thanks the services of Rolf Meier, who has been editing Astronotes for over ten years. Council also thanks all the volunteer work done by members on behalf of the Centre and the continuing generous donations from sustaining members. Only with this kind of support is it possible to provide members so much for so little.

C. ROBIN MOLSON, *Secretary*

ST. JOHN'S CENTRE

Our centre continued its long association with the Newfoundland Marine Institute, as the site of our monthly meetings moved to their new, larger building.

For the first time in years, our membership has had a modest increase. Several members continued building telescopes, with at least one being completed. We have the beginnings of a Newsletter and a permanent Observing Section. Both, we hope, will enjoy much success.

Educational activities have been highly successful. In conjunction with the Newfoundland Museum and Parks Canada, public information sessions and a pamphlet on Comet Halley resulted in a well-attended public star party at Cape Spear Historic Site to observe Halley.

The following is a list of our activities:

- February Observing Night
- May Observing Night
- October Annual Meeting
- November Film, Newsletter and Observing Group started. Several members began observations of Comet Halley.
- December Public information sessions; Halley Night.

DAVID BOURGEOIS, *Secretary*

SARNIA CENTRE

The Sarnia Centre holds nine regular meetings each year. The centre meets at Lambton College on the last Friday of each month (except July, August, and December). In addition to these regular meetings, the centre has observational meetings at irregular intervals depending upon atmospheric conditions. The members of Sarnia Centre also visit nearby Royal Astronomical Society of Canada centres and are invited to amateur astronomy meets in the United States. The centre has a journal titled "URANIA". Urania is published at least once a year and contains original research conducted by members of the Sarnia Centre. A number of special bulletins are also published and are the official "Supplement of Urania". The special bulletins deal with the astronomical issues that occur from time to time.

The Sarnia Centre also possesses an excellent Library. The centre has astronomy periodicals and circulates them to the membership. The centre's library also has such valuable books as the Tirion 2000 atlas and the A.A.V.S.O. star atlas.

The officers of the centre meet before each regular meeting. Planning and administrative tasks are completed in order to devote the regular meetings to astronomy topics. The Council of the Sarnia Centre meets at least once a year to discuss special projects. The last meeting of Council was held on November 2nd at the home of John Thompson.

The regular meetings of the Sarnia Centre were held in Room A210 of Lambton College at 7:30 pm on the following dates last year: January 25th, February 22nd, March 29th, April 26th, May 31st, June 28th, September 27th, October 16th, and November 29th.

Regular meetings featured films, speakers from our own centre, and speakers from other centres (such as Peter Jedickie of London who spoke on "Space Stations" and Randy Groundwater of Windsor who talked about "Comets").

Our centre is represented at the National Council by John Thompson. He travelled to Toronto to attend the September meeting of the National Council of the R.A.S.C.

The Sarnia Centre had three recipients of the Society's Membership Certificate this year: Zdenko Saroch (President for 1986), Rick Cabajsky (2nd Vice-president for 1986), and Mr. Ment Hus. These three have all been active members of the Sarnia Centre for the past 5 years and were members of the London Centre previously.

J. TOWNSEND, *Secretary*

SASKATOON CENTRE

Activity in the Saskatoon Centre has increased during 1985. Friday night observation sessions were undertaken at the Centre's Observatory with tutored observing being made available for new members.

The Saskatoon Centre's 1985 celebration of International Astronomy Day was held Saturday, April 20 at Market Mall, a local shopping centre. A good turnout of members, telescopes, and display materials including slides and a computer proved to be of interest to the public. Many questions were answered regarding Halley's Comet.

The Centre hosted two star nights in 1985, the first was held Saturday, July 20 at Pike Lake Provincial Park. The second was the tenth annual Saskatoon Public Star Night. An estimated three hundred visitors came to visit Diefenbaker Park on the nights of July 26 and 27. The Centre was out in good force with a range of telescopes from 4 to 12 $\frac{1}{4}$ inches aperture.

Anticipating the return of Halley's Comet, ephemerides were prepared and distributed for the Centre members as well as newspapers and other publications. The Centre also began an astrophotographic workshop which has been running weekly, every Friday. The program is a hands-on approach covering photography of the heavens as well as darkroom techniques. To date several new members have participated and several photographs of Comet Halley as well as other celestial objects have been obtained.

A Perseid meteor watch was held at Rystrom's Observatory Saturday, August 10. The shower was not to peak until August 11 but several bright meteors were observed. Cameras on tripods were set up hoping to capture some meteors on film.

The monthly programs at the start of the year were composed of audio-visual modules and seminars covering purchasing of telescopes, the use of star atlases, astrophotography and observing techniques. The Centre was treated to a lecture by Dr. R. Skinner, Honorary President who presented the latest theories of cosmology.

The monthly programs in the fall shifted emphasis to Halley's Comet. A lecture was given to describe where and when to observe the Comet and what optical aid would be needed. A series of films and videos were shown along with reminiscences from people who had seen the 1910 apparition of the Comet. Excerpts were presented by year seven students from Lester B. Pearson school. The students were known in Saskatoon as *The Comet Kids*.

The format of the Centre Newsletter was changed and has returned to monthly production. The format change provided easier production and publication.

W.J. FERNETS, *President*

TORONTO CENTRE

A noteworthy achievement of 1985 was the purchase of a Macintosh computer to help manage the membership administration, newsletter production and other administrative duties. While not yet up to full utilization by the Centre, the computer so far has been a tremendous help.

The public education committee under Brian Beattie was active throughout 1985 with one mall display in February, a number of talks at libraries, community centres and public parks across Metropolitan Toronto and Oshawa, Astronomy Day displays at Nathan Phillips Square and the Ontario Science Centre, and public star nights at Harbourfront in July, August and September. Once again, members set up their telescopes at the David Dunlap Observatory on Saturday nights for the benefit of visitors.

Astronomy Toronto, produced by Randy Attwood at the studios of Rogers Cable TV, began its fifth season. Many members also appeared on television, in radio interviews and as invited guest lecturers most often on the topic of Comet Halley.

This year there were 12 Members Nights organized by the Observational Activities Committee under Ian McGregor. For the most part, the Members Nights were preceded by the popular demonstrations in the Star Theatre.

Some members travelled to Papua, New Guinea to see the total solar eclipse. Members also travelled to Springfield, Vermont for the annual Stellafane display, and to Mt. Forest for Starfest '85. The annual open house at the David Dunlap Observatory was exceptionally well attended (and even clear for a while), and we thank Dr. Donald Fernie and the staff and students of the observatory for their continued hospitality.

During 1985 we also saw the resurrection of the annual banquet and awards presentations: Alia Alsharif won the Bert Winnearls Award; Michael Watson won the Bertram J. Topham Award; Brian Beattie won the Andrew Elvins Award; and John Hicks won the Jesse Ketchum Award. Also presented last year were two Membership Awards to Dr. Kenneth Clute and Phil Mozel.

The Program Committee under Dr. Charles Dyer organized a series of seven lecture meetings, including a joint meeting with the Royal Canadian Institute. The program for fiscal 1985 was the following:

- October 19, 1984 Ian G. McGregor, Great Star of the Ancient Maya
- November 25 Prof. R.F. Garrison, The Search for Extra-Terrestrial Life
- January 25, 1985 Robert May, Randy Attwood, Michael Watson, Nov. 23/84 Total Solar Eclipse Round-Up
- February 22 Prof. Marshall McCaul, The Chemistry of Galaxies
- March 22 Prof. Jeremy Tatum, Halley's Comet
- April 26 Prof. William Carroll, The Influence of Galileo on Astronomy
- May 31 Prof. R.N. Hendrickson, Radio Jets

Thanks to Steven Spinney and Walter MacDonald for operating the projector and to Eric Galt, Paul and Eric Gunter, and Darnley Wright for helping with the refreshments for all the meetings.

It is an enormous and important job to handle the membership records for the Toronto Centre. Thanks to Karin Becker, Membership Secretary, for handling this. In 1985, the Centre had 700 regular, 51 youth, 80 life and 84 associate members, for a total of 915. The membership count excluding associate members represents a 9.5% increase over last year's total of 742.

It is with regret we record the deaths of three members in the past year: Mr. F. Saxon, Mr. John Langford and Mr. R. Jacobsen. Observational activity was lively during 1985 with a series of city star parties organized by Steven Spinney, regular deep sky star parties at Long Sault Conservation Area organized by Paul Markov, and a functioning observatory in Schomberg, under the direction of Michael Watson.

The Optical Workshop under the leadership of John Morriss was reinstated as a series of 10 Saturday morning classes. There was a series in the spring and another in the fall.

A new committee under the direction of Kim Rowe was organized this year to look at turning the optical workshop into a more functional room for the Toronto Centre. Working with the Planetarium, Kim and his committee hope to turn this room into a part library, part meeting room and part optical workshop. We are still waiting for a reply from the Planetarium on this proposal.

The Centre newsletter 'SCOPE under the editorship of Betty Robinson continued to provide a

variety of articles of interest to the members, as well as fulfilling its charge of communicating the activities of the Centre to the members. The computer has been very helpful, as has been the assistance of assistant editors Walter MacDonald and Randy Attwood.

I wish to recognize the contribution over the past year of Membership Secretary Karin Becker. Karin is stepping down from the council. We owe her a great deal of thanks for the time given to this position. I also wish to recognize the contribution of Cyril Youll, who resigned from Council earlier this year and outgoing councillor, Scott Ramsay.

Thanks are due to all councillors and other volunteers of the Toronto Centre whose donated time has meant all the above could have been accomplished. Thanks should also go on record to our President Randy Attwood, whose dedication, initiative and leadership helped make 1985 one of the busiest and most productive years for the Toronto Centre.

Finally and importantly, thanks to the McLaughlin Planetarium for their generous support in providing a meeting place and mailing address for the Toronto Centre.

BETTY ROBINSON, *Secretary*

VANCOUVER CENTRE

Ten council meetings and 10 regular meetings were held during 1985. Speakers were exchanged with the Edmonton Centre. Star parties were arranged each month; during excellent summer observing weather the Cypress Bowl site was well attended, once the all-night skiing lights were turned on, the observing group moved to Campbell Valley Park in Langley.

The video committee produced "Stargazer" which was shown at the Edmonton G.A. Another longer video is in preparation with Channel 10, and a third on light pollution is under consideration.

Five of our members attended the Edmonton G.A. where Karl Miller won an award.

Astronomy Day in April was well attended.

A highly successful "Astrowap" was held in November, with all telescopes sold.

We continued to use the auditorium of the Vancouver Museum for our regular meetings, and thanks to our President, David Dodge, Director of the Gordon Southam Observatory, we also continued to use the lecture room for all council meetings, for the coffee hour after regular meetings, and for special events such as Astronomy Day and "Astrowap."

Through the courtesy of David Hurd, Director of the H.R. McMillan Planetarium, members were invited to two free shows and special extra showings on Astronomy Day.

We regret to report the sudden death of a new member, Ivor Mills.

- January 8 David Dodge – presidential address.
- February 12 Art Holmes – Collimating a Newtonian. Films.
- March 12 Planetarium Show – "Canada in Space."
- March 14 Annual Dinner at Capilano Chinese Restaurant. Paul Deans (Edmonton) "Stars over China."
- April 9 Karl Miller – Computerizing a telescope.
- April 27 Astronomy Day held at the Gordon Southam Observatory with excellent attendance. Foucault testing and mirror-grinding demonstrations given continuously. NFB film "Comet" and video "Stargazer" shown alternately. Sky charts and brochure "Supernova" handed out. Two special free Planetarium shows. Amateur telescopes display.
- May 14 Report on Astronomy Day.
- June 11 David Dodge on his visit to Peru (seeking sites for Halley Comet tour in 1986).
- June 22 Annual picnic at Art Holmes' place in Langley (last chance to use the site).
- August 11 Perseid meteor showers public attendance at Cypress Bowl.
- August 19 Mount Kobau annual star party.
- September 10 Reports on summer activities, the G.A., Mt. Kobau, etc.
- October 8 Comet Halley.
- November 12 Planetarium show "Halley's Comet, once in a lifetime."
- December 10 Annual Elections.

SALLY BAKER, *Secretary*

VICTORIA CENTRE

Membership continued to increase in the past year, with 112 General, 10 Youth, and 23 Life members for a total of 145. Of the overall increase of 35 new members, many of them joined as a result of our activities at the Hobby Show and the "Summer Evenings With the Stars".

April 27 was Astronomy Day this year, and the Star Party at the Dallas Road waterfront area was well attended. The Centre's Evans-Vander Byl Telescope was present as well as individual members' telescopes. The EVBT was also in use at several of the Saturday Visitors' Night at the Dominion Astrophysical Observatory during July and August. Only a few of the members brought their telescopes for these evenings as some of them were occupied with research being done on the occultation of Jupiter's moons.

Because of the increasing public interest in astronomy, we held our "Summer Evenings With the Stars" again this August. If interest continues, this event will remain an annual rather than biennial event. The first evening was held at DAO, hosted by Dr David Crampton. The other evenings consisted of lectures at UVic: "A Photo Tour of the Night Sky", Jack Newton; "Our Neighbour Worlds", a film, and the final lecture was given by Dr Jeremy Tatum, entitled "Twinkle, Twinkle, Little Star".

We had a display at the Victoria Hobby Show in April, to which several members contributed both time and display materials.

Apart from the above, our regular ten meetings were well attended; all but the Annual Meeting being advertised and open to non-members as part of our public education effort.

- September 12 "The Space Telescope", Dr Chris Prichet.
- October 17 Annual Meeting, and "Eclipse of the Midnight Sun", Dr John Climenhaga.
- October 30 A special lecture by Dr Sidney van den Bergh, "The Age and Size of the Universe".
- November 14 "Starlife" and "To the Edge of the Universe" – films, plus a talk by Lewis Knee on the Pine Mountain private observatory in Oregon.
- December 12 "Nova Vulpeculae 1984", Russell Robb.
- January 9 "Star-Gazing", Philip Teece.
- February 13 "The Structure of Quasars", Dr John Hutchings.
- March 20 "Orderly and Disorderly Stellar Motions in Giant Galaxies", Dr Martin Schwartzschild.
- April 10 "Extragalactic Radio Jets", Dr Anne Gower.
- May 8 Members Night, with talks and demonstrations by members on their various projects.
- June 12 "The Galilean Satellites", Philip Stooke.

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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.

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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 which he has carried out in astronomy and closely allied fields of original investigation.

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1949 – Frank Sisman (Hamilton)	1980 – David Levy (Kingston)
1950 – *F. Keith Dalton (Toronto)	
1951 – DeLisle Garneau (Centre d'Astronomie de Montréal)	

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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.

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1979 – W. Morrison (Kingston)
1981 – C. McCaw (Vancouver)
1983 – C. Spratt (Victoria)

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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.

- | | |
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| 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) |
| | 1985 – J. Cam Fahrner (Calgary) |

*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 Ruthowski (Winnipeg)
- 1982 – Phil Mozel (Toronto)
- 1985 – Donald F. Trombino (U.S.A.)

DECEASED MEMBERS FOR 1985

- Mr. W.D. Cooley (U.S.A.)
- Mr. J.E. Coupe (Cdn Unattached)
- Mr. J. Hargreaves (Ottawa)
- Dr. L. LaPaz (U.S.A.)
- Mr. J.C. Parsons (Victoria)
- Mr. L.V. Powis (Hamilton)
- Mr. F.S. Saxon (Toronto)
- Dr. I.S. Shklovsky (Honorary)
- Mr. L. Staffin (Windsor)
- Mr. J.A. Taylor (Ottawa)
- Dr. T. Weiner (Cdn Unattached)

CENTRE TREASURERS' REPORTS FOR 1985

	Calgary	Edmonton	Halifax	Hamilton	Kingston	Kitchener-Waterloo	London	Montreal	CF Mtl	Niagara
REVENUE										
Membership Fees	\$ 5923.70	\$ 2,426.00	\$ 1,808.04	2179.82	\$ 895.32	\$ 798.00	\$ 1,852.50	\$ 920.00	\$ 866.00	
Life Members Grants	120.00	72.00	168.00	16.00	48.00	32.00	136.00	16.00	16.00	
Donations	—	11.00	—	2357.30	74.06	73.26	43.64	40.00	110.00	
Educational Activities	—	—	22.50	—	—	—	—	—	—	
Interest & Dividends	509.43	353.00	126.40	515.09	12.20	216.85	3,111.69	35.00	1.39	
Sales of Handbooks (Net)	—	—	454.74	128.29	49.50	2.00	(4.50)	34.00	61.00	
Advertising	75.00	—	—	8.00	16.00	—	—	—	—	
General Assembly (incl. Travel Grants)	—	950.00	337.00	179.50	275.50	—	—	—	—	
Other Grants	—	121.00	—	—	7.50	—	—	—	—	
Miscellaneous	5492.02	42.00	30.00	2122.24	3.17	51.00	476.68	—	1,968.91	
Total Revenue	12,150.15	3,975.00	2,946.68	7506.24	1,381.25	1,173.11	5,616.01	1,045.00	3,023.30	
EXPENDITURES										
Fees remitted to National Office	3087.50	1,206.00	1,126.50	1122.00	442.50	378.00	951.00	529.00	519.00	
Library	561.95	179.00	146.95	163.10	—	176.80	94.60	—	—	
Meetings & Newsletters	1143.64	639.00	283.16	966.05	394.62	523.55	581.74	—	826.63	
Annual Dinner (Net)	—	—	(-7.75)	20.99	—	43.36	—	—	1,661.05	
General Assembly (incl. Travel Grants)	—	163.00	818.00	179.50	275.50	—	341.10	—	—	
Equipment & Supplies	1336.72	733.00	1,207.47	237.59	36.58	—	162.00	—	19.34	
Office Administration	93.09	204.00	—	115.80	168.58	—	187.73	—	83.18	
General Expenses & Audit	—	—	—	13.50	—	—	109.89	—	—	
Educational Activities	229.09	81.00	20.00	—	16.00	—	—	—	—	
Insurance	—	—	—	291.00	—	—	565.00	50.00	—	
Awards & Donations	224.19	50.00	91.88	—	32.50	—	—	—	20.00	
Operating Expenses - Observatory	500.00	—	103.42	842.60	—	—	1,290.01	200.00	—	
Miscellaneous	3705.58	112.00	—	4197.49	38.95	82.64	1,318.67	29.00	222.24	
Total Expenditures	10881.76	3,365.00	3,789.63	8149.62	1,405.23	1,204.35	5,601.74	808.00	3,351.44	
Surplus or (Deficit) on Operations	1268.39	610.00	(842.95)	(643.38)	(23.98)	(31.24)	14.27	237.00	(328.14)	
Balance from 1984	9091.45	5,684.00	1,884.25	3215.17	439.52	1,441.36	3,871.53	(237.00)	1,253.76	
Balance to 1985	10359.84	6,294.00	1,041.30	2571.79	415.54	1,410.12	3,885.80	—	925.62	
Other Assets	56212.36	—	3,000.00	—	—	—	—	—	—	1,184.33

NOT REPORTED

CENTRE TREASURERS' REPORTS FOR 1985

	Ottawa	Quebec	St. John's	Sarnia	Saskatoon	Toronto	Vancouver	Victoria	Windsor	Winnipeg
REVENUE										
Membership Fees	\$ 2,510.00				\$ 822.50	\$15,412.35	\$2,322.50	\$ 3,414.50		\$1,525.00
Life Members Grants	256.00				32.00	600.00	160.00	184.00		16.00
Donations	611.14				73.00	80.00	-	55.00		5.00
Educational Activities	-				-	-	-	-		225.00
Interest & Dividends	265.55				176.90	3,232.12	354.55	1,019.78		-
Sales of Handbooks (Net)	68.00				8.50	27.00	50.00	54.94		71.50
Advertising	-				-	1,469.75	-	60.00		-
General Assembly (incl. Travel Grants)	-				-	816.00	-	-		-
Other Grants	-				-	-	-	-		135.00
Miscellaneous	398.00				205.00	98.67	12.50	175.00		1,203.44
Total Revenue	4,108.69				1,317.90	21,735.75	2899.55	4,963.22		3,180.94
EXPENDITURES										
Fees remitted to National Office	1,970.57				498.50	9,346.50	1120.50	1,882.50		593.00
Library	-				-	-	-	65.88		-
Meetings & Newsletters	1,193.72				149.58	3,931.17	459.42	-		257.71
Annual Dinner (Net)	-				-	58.92	3.00	(-189.13)		-
General Assembly (incl. Travel Grants)	-				-	816.00	-	100.00		135.00
Equipment & Supplies	11.40				-	-	-	312.83		-
Office Administration	268.81				135.20	1,948.45	-	286.91		51.18
General Expenses & Audit	-				-	300.00	55.89	-		691.37
Educational Activities	185.79				131.67	159.60	534.38	1,138.87		75.00
Insurance	-				185.00	400.00	-	-		239.00
Awards & Donations	-				-	30.58	-	-		-
Operating Expenses - Observatory	684.91				26.51	701.00	-	383.00		(15.00)
Miscellaneous	115.56				42.00	1,931.86	-	-		1,151.44
Total Expenditures	4,430.76				1,168.42	19,624.08	2173.19	3,980.86		3,178.70
Surplus or (Deficit) on Operations	(322.07)				149.44	2,111.81	726.36	982.36		2.24
Balance from 1984	11,276.82				15,566.43	32,433.90	3337.76	1,510.38		56.39
Balance to 1985	10,977.64				15,715.87	34,545.71	4064.12	2,037.52		58.63
Other Assets	-				-	-	-	38,448.88		1,732.08

NOT REPORTED

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA

FINANCIAL STATEMENTS

DECEMBER 31, 1985

C. J. Finkham & 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 SOCIETE ROYALE D'ASTRONOMIE DU CANADA

We have examined the balance sheet of The Royal Astronomical Society of Canada as at December 31, 1985, and the statements of revenue and expenditure and deficit, for the year then ended. Our examination was made in accordance with generally accepted auditing 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, 1985 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
February 4, 1986

CHARTERED ACCOUNTANTS

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
 LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
BALANCE SHEET
 AS AT DECEMBER 31, 1985

A S S E T S

	<u>1985</u>	<u>1984</u>
<u>CURRENT</u>		
Cash and short term deposit	\$ 72,218	\$ 49,189
Accounts receivable	21,471	15,582
Prepaid expenses	305	193
Loan receivable	<u>1,000</u>	<u>-</u>
	<u>94,994</u>	<u>64,964</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)	31,585	30,411
Marketable securities - at cost		
(Market value: 1985 - 3,600	4,000	4,000
1984 - 3,468)		
Guaranteed investment certificate	<u>91,600</u>	<u>91,600</u>
	<u>127,185</u>	<u>126,011</u>
<u>FIXED</u>		
Office building, furniture, equipment, library (nominal value)	<u>1</u>	<u>1</u>
	<u>\$ 225,199</u>	<u>\$ 193,995</u>

Approved on behalf of the Council
of the Society

Roy L. Bishop
.....President

B. Ralph Chan
.....Treasurer

LIABILITIES

	<u>1985</u>	<u>1984</u>
<u>CURRENT</u>		
Accounts payable and accrued charges	\$ 34,426	\$ 29,748
Deferred revenue		
- Membership fees for ensuing year	21,690	16,716
- Journal and handbook subscriptions	17,587	13,789
- Unappropriated life membership fees (Schedule A)	<u>26,913</u>	<u>25,605</u>
	100,616	85,858
<u>SPECIAL PURPOSE FUNDS</u> (Schedule C)	<u>127,185</u>	<u>126,011</u>
<u>OPERATING DEFICIT</u>	<u>(2,602)</u>	<u>(17,874)</u>
	<u>\$ 225,199</u>	<u>\$ 193,995</u>

C. J. Tinkham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
STATEMENT OF OPERATING DEFICIT
FOR THE YEAR ENDED DECEMBER 31, 1985

	<u>1985</u>	<u>1984</u>
Deficit, January 1	\$ 17,874	\$ 36,030
<u>Deduct</u> : Excess of revenue over expenditure	15,272	7,552
Transfer from special purpose funds	-	<u>10,604</u>
Deficit, December 31	<u>\$ 2,602</u>	<u>\$ 17,874</u>

C. J. Tinkham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
STATEMENT OF REVENUE AND EXPENDITURE
FOR THE YEAR ENDED DECEMBER 31, 1985

	<u>1985</u>	<u>1984</u>
<u>REVENUE</u>		
Membership fees		
- R.A.S.C. Centres	\$ 23,732	\$ 21,964
- Individual members	15,174	12,109
- Life membership: annual appropriation	<u>1,416</u>	<u>1,348</u>
	<u>40,322</u>	<u>35,421</u>
Grants and Donations		
- Government of Canada-annual grant	10,000	10,000
- Miscellaneous donations	<u>185</u>	<u>40</u>
	<u>10,185</u>	<u>10,040</u>
Publications		
- R.A.S.C. Journal: subscriptions	17,227	16,885
reprints	916	759
publishing revenue	<u>8,291</u>	<u>6,513</u>
- Observer's Handbook	<u>79,528</u>	<u>62,796</u>
	<u>105,962</u>	<u>86,953</u>
Miscellaneous income		
- interest on investments	12,215	6,937
- insignia sales	567	160
- rent	<u>9,600</u>	<u>7,100</u>
	<u>22,382</u>	<u>14,197</u>
	<u>178,851</u>	<u>146,611</u>
<u>EXPENDITURE</u>		
Publications (Schedule B)	109,188	90,309
Office salaries and employee benefits	27,855	26,097
Postage and shipping expense	4,124	4,593
General and office expense	3,554	2,805
Stationery, printing and supplies	995	737
Life membership allotment to Centres	2,123	1,920
General assembly and travel expense	3,537	2,313
Legal and accounting	1,325	1,869
Advertising and publicity	983	1,304
Insignia, medals and awards	1,278	328
Telephone	990	789
Insurance	702	668
Library expense	674	399
Office equipment purchases	-	227
Bad debts (recoveries)	258	110
Building expenses	<u>5,993</u>	<u>4,591</u>
	<u>163,579</u>	<u>139,059</u>
<u>EXCESS OF REVENUE OVER EXPENDITURES</u>	<u>\$ 15,272</u>	<u>\$ 7,552</u>

C. J. Fenham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1985

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. 5% 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 expenditure 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, 1985

	<u>1985</u>	<u>1984</u>
BALANCE, January 1	\$ 25,605	\$ 22,765
<u>Add:</u> Life membership fees received in the year	<u>2,724</u>	<u>4,188</u>
	28,329	26,953
<u>Deduct:</u> Appropriation to general account	<u>1,416</u>	<u>1,348</u>
BALANCE, December 31	<u>\$ 26,913</u>	<u>\$ 25,605</u>

SCHEDULE B
PUBLICATION COSTS

R.A.S.C. Journal

Printing of journal	\$ 45,558	\$ 37,808
Printing of National Newsletter	12,112	11,379
Editorial assistance	1,000	750
Distribution costs	12,700	10,838
Reprints	<u>1,810</u>	<u>1,468</u>
	<u>73,180</u>	<u>62,243</u>

Observer's Handbook

Printing	29,089	25,899
Distribution costs	6,461	1,739
Advertising	<u>458</u>	<u>428</u>
	<u>36,008</u>	<u>28,066</u>
	<u>\$ 109,188</u>	<u>\$ 90,309</u>

C. J. Fenham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
SCHEDULE C
COMPOSITION OF SPECIAL PURPOSE FUNDS
AS AT DECEMBER 31, 1985

	RUTH NORTHCOTT FUND	ENDOWMENT FUND	TOTAL
Cash	\$ 3,243	\$ -	\$ 3,243
Term deposits	18,000	10,000	28,000
Securities	-	4,000	4,000
Guaranteed Investment Certificate	-	91,600	91,600
Accrued interest	342	-	342
	<u>\$ 21,585</u>	<u>\$ 105,600</u>	<u>\$ 127,185</u>

C. J. Tinkham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

NATIONAL OFFICERS AND COUNCIL FOR 1986 CONSEIL ET ADMINISTRATEURS NATIONAUX

Honorary President — Arthur E. Covington, B.A., M.A., Ottawa
President — Roy L. Bishop, Ph.D., Halifax
1st Vice-President — Mrs. Mary Grey, B.Sc., Ottawa
2nd Vice-President — Lloyd A. Higgs, Ph.D., Penticton
Secretary — R. Peter Broughton, M.Sc., A.R.C.T., 136 Dupont Street, Toronto M5R 1V2
Treasurer — B. Ralph Chou, B.Sc., O.D., M.Sc., 136 Dupont Street, Toronto M5R 1V2
Recorder — Leo Enright, B.A., Kingston
Librarian — Brian Beattie, B.A., 136 Dupont Street, Toronto M5R 1V2

Editor of JOURNAL — Alan H. Batten, D.Sc., Ph.D., F.R.S.C., Victoria
Editor of OBSERVER'S HANDBOOK — Roy L. Bishop, Ph.D., Halifax
Editor of National Newsletter — Ian McGregor, B.Sc., B.Ed., Toronto
Executive Secretary — Miss Rosemary Freeman, 136 Dupont Street, Toronto M5R 1V2

Council — Past Presidents — Ian Halliday, Ph.D., F.R.S.C., Ottawa
Franklin Loehde, B.Sc., B.Ed., Edmonton

Representatives from Centres —

Calgary: J.C. Fahrner	Centre d'Astronomie	Toronto: S. Challenger
Edmonton: M.C. Rankin	Mtl.: M.A. Gélinas	R. May
Halifax: D. Pitcairn	Niagara: C.S. Fassel	K. Rowe
Hamilton: J. Winger	Ottawa: B. Burke	S. Spinney
Kingston: T.D. Hicks	R.G. McCallum	M. Watson
Kit.-Waterloo: R. Koenig	Québec: D. Lemay	Vancouver: K. Miller
London: T. Steckner	St. John's: R. Dodge	Victoria: G.R. Ball
Montreal: G. Boyle	Sarnia: J. Thompson	Windsor: H. Lee
	Saskatoon: J. Young	Winnipeg: G. Westcott

CENTRE SECRETARIES / SECRÉTAIRES DES CENTRES FOR 1986

CALGARY	Robert Loblaw, 1135 Hunterston Rd. N.W., Calgary, T2K 4M9
EDMONTON	Mrs. Yni Ebbers, 5526-145A Avenue, Edmonton, T5A 2S1
HALIFAX	R. Fraser, 40 Murray Hill Drive, Dartmouth, B2Y 3A8
HAMILTON	Mrs. T. Quinn, 11 Ridgewood Blvd., R.R. #3, Dundas, L9H 5E3
KINGSTON	Mrs. S. Sorensen, #1-50 Montreal Street, Kingston, K7K 3E8
KIT.-WATERLOO	G. Mudry, 10 Royal Orchard Place, Kitchener, N2N 1Z6
LONDON	Mark Sinkins, 405 Ridout Street, London, N6C 4A1
MONTREAL	G. Boyle, 8660 Jean Brillon, #404, LaSalle, H8N 2G4
CENTRE D'ASTRONOMIE	Diane Carpentier, 1362 Holmes, St. Hubert, P.Q., J4T 1P5
NIAGARA	W. Jutting, 138 South Drive, St. Catharines, L2R 4W2
OTTAWA	C.R. Molson, 2029 Garfield Ave., Ottawa, K2C 0W7
QUEBEC	M. Gilles Caisse, 1102, J.-C. Cantin, Cap-Rouge, P.Q. G1Y 2X1
ST. JOHN'S	D.M. Bourgeois, 36 Second St., Mt. Pearl, A1N 1V5
SARNIA	James Townsend, Box 103, Wyoming, Ont. N0N 1T0
SASKATOON	Ms. L. Wilcox, 2527 Clarence Ave., S., Saskatoon, S7J 1M3
TORONTO	Ms. B. Robinson, 4348 Dallas Court, Mississauga, L4W 4G7
VANCOUVER	Mrs. S. Baker, 2063 W. 61 Ave., Vancouver, V6P 2C6
VICTORIA	Ms. J.E. Stringer, 701 Esquimalt Rd., #1004, Victoria, V9A 3L5
WINDSOR	L.A. Durocher, 453 E. Belle River Rd., R.R. #2, Belle River, N0R 1A0
WINNIPEG	B. Land, 18 St. Dunstan's Bay, Winnipeg, R3T 3H5

