

**THE
ROYAL ASTRONOMICAL
SOCIETY OF CANADA
ANNUAL REPORT
1966**



**SUPPLEMENT TO THE JOURNAL
March 1967**

PRESIDENT'S MESSAGE

My message as President is one of thanks to all who have helped to make the year 1966 a good one for the Royal Astronomical Society of Canada. We can record an increase in membership, an increase in observational activities, an improved financial situation and the formation of a new Centre.

The new Centre at St. John's, Newfoundland, brings to 17 the number of Centres which are distributed from coast to coast. From reports of growing interest, it would appear that a further increase may be expected within the next few years.

Interest in astronomy is growing. There are more students involved in graduate work in our universities this year than in any previous year. More people are engaged in making telescopes and auxiliary equipment, and more amateurs are active observers in one or more of the various avenues of endeavour, occultations, aurora, meteors, deep sky wonders, nova search, Messier objects, moon, sun, planets and so on. As the observing techniques improve, so the contribution to science is increased. For instance a portable radio and tape recorder can improve the timing of occultations and of meteors.

Mount Kobau National Observatory and the Queen Elizabeth II 150-inch telescope are becoming more of a reality, month by month. The road from the Richter Pass to the mountain top is completely graded, forming an easy access by private motor vehicle. The giant 150-inch quartz mirror of the Queen Elizabeth II telescope is at an advanced stage of formation, and the optical shop where the mirror will be figured is soon to be built in Vancouver. Other instruments which will form part of Mount Kobau National Observatory include a solar tower, an astrometric telescope, a photoelectric telescope, a mirror transit circle, together with auxiliary facilities for maintenance and upkeep. The weather pattern of the mountain top is being examined closely to determine the best position for the various instruments.

A sad event occurred in the passing of Dr. R. M. Petrie, Dominion Astronomer, and Director of the Dominion Astrophysical Observatory. Dr. Petrie was National President of the R.A.S.C. in 1955 and 1956, and was deeply interested in the welfare of the Society. He was recognized internationally for his scientific contributions, and at the time of his death was chairman of the Queen Elizabeth II Telescope design team.

The General Assembly, held in Winnipeg last May, was a success and a credit to the planning committee. The dykes, of which there was still some evidence, were mute reminders of the threat of flood which had worried all of Winnipeg a few short weeks before the Assembly. It did not dampen their enthusiasm though. The rapidly expanding campus of the University of Manitoba provided ideal facilities for all our needs and the welcome extended by President Hugh Saunderson was most cordial. The reception at Government House and the banquet tendered by the City of Winnipeg were highlights of hospitality.

This year, Canada's Centennial, an increased public interest in astronomy is apparent. As a centennial project four cities have elected to build a planetarium, raising to nine or more the number of planetaria that will be in operation in Canada within the next year or two. We are more than ever space conscious because of the spectacular efforts that are being made to place a man on the moon. Also we are more than ever aware of the nature and extent of the universe of which we are a part.

This awareness is partly due to the fact that more people are active observers. I want to commend the efforts of those who have encouraged, by their own enthusiasm, the active participation of young people. Therein lies our future.

Malcolm M Thomson
National President.

REPORT OF THE NATIONAL SECRETARY

The past year has shown keen interest in the varied activities of the Society and continued growth in membership.

In January we were pleased to welcome a group of amateur astronomers in St. John's, Newfoundland, as the seventeenth Centre of the Society. Friendly relations have been maintained with groups in other areas.

During 1966, meetings of the National Council were held on January 8, March 11, May 20 and October 1; the Executive Committee met on March 1, May 6, September 6 and December 2. The Annual Meeting of the Society was held in Toronto on March 11, with the First Vice-President, Mr. Malcolm Thomson, in the chair (See June JOURNAL, p.144).

As of September 30, 1966, the membership of the Society totalled 2,294, including 136 Life Members. The seventeen Centres reported as follows:

Calgary	49	Niagara Falls	28
Français de Montréal	218	Ottawa	169
Edmonton	69	Quebec	86
Halifax	9	Toronto	540
Hamilton	69	Vancouver	77
Kingston	18	Victoria	64
London	36	Windsor	36
St. John's	20	Winnipeg	88
Montreal	217		

Unattached membership included:

Canada	130	Foreign	34
U.S.A.	322	Honorary	15

Delegates from 11 Centres converged on the mid-western city of Winnipeg for the 1966 General Assembly, held at the University of Manitoba from May 20 to the 22nd. Excellent facilities were provided for Council and Committee meetings as well as for the plenary sessions. (See June JOURNAL, p.144.) The three-day program also included visits to the newly-opened University Planetarium and a picnic and bus trip to Assiniboine Park, St. Boniface and Lower Fort Garry. A dinner gathering for National Council members was provided by the University authorities and a civic banquet for all delegates was arranged under the auspices of the Mayor and Council of the City of Winnipeg. The Society is indebted to the members of the Winnipeg Centre for their invitation to hold the 1966 General Assembly in that city, and special thanks are expressed to Mr. B. F. Shinn, President of the Centre, and to Professor R. J. Lockhart, chairman of the local Planning Committee.

Service Awards were presented to Mr. Pierre Lemieux (Centre Français de Montréal); Mr. Samuel Litchinsky (Calgary); Professor W. J. McCallion (Hamilton); Mr. William A. Warren (Montreal). Membership Certificates were presented to 25 members during the year as follows: Montreal 7, Hamilton 6, Toronto 10, Ottawa 2. The Society's special award for the winning entry in the astronomy section of the Fifth Canada-Wide Science Fair held in Windsor, Ontario, was presented to Malcolm McLeod of Regina. During the year, presentations of the Society's Gold Medal were made to Anthony Moffat for 1965 and to William Sherwood for 1966.

The Society's appreciation is extended to all officers and members of the National and Centre Councils for their support and co-operation.

It is with regret that we record the death of the following members, and we

extend the sympathy of the Society to families and friends.

Mr. James Barnes (Vancouver)	Mr. T. R. Macfarlane (Canada)
Mr. B. F. Drew (Canada)	Mr. George Naugler (Toronto)
Mr. Frederick Fleet (Toronto)	Mr. R. Peters (Victoria)
Mr. J. H. Jones (U.S.A.)	Dr. R. M. Petrie (Victoria)
Mr. A. W. Lindbergh (Montreal)	Mr. H. Malcolm Priest (U.S.A.)
Mr. W. M. Simpson-Baikie (Victoria)	

NORMAN GREEN, *National Secretary.*

REPORT OF THE LIBRARIAN

The year 1966 has been unspectacular for our library; several new books and journals have been acquired, including *Mariner IV* and *Surveyor II* prints, and a set of large mounted astronomical photographs, suitable for display.

The reorganization of the library, which I mentioned in last year's report, continues intermittently, and should be complete by mid-1967. The older books in the library are being catalogued, and copies of this catalogue should be available to the Centres later this year. Some old unbound journals, judged to be of temporary value only, have been discarded. Other such material has been stored in the basement of the National Office.

On behalf of the Society, I should like to thank the many individuals who have donated books and periodicals to the library. In particular, Mr. Wilfred Miller has generously donated several periodicals which we would not otherwise receive, and Mr. C. A. Crook presented the Society with forty years of back JOURNALS. The continuing help of the Executive Secretary and other members of our Society, is gratefully acknowledged.

JOHN R. PERCY, *National Librarian.*

REPORT OF SECRETARIES OF CENTRES

CALGARY CENTRE

Nine general meetings were held in the Science Building of the University of Calgary, sponsored by Dr. D. J. I. Fry of the Department of Physics, and ten Council meetings were held. The program for the general meetings was as follows:

January 12—Junior Forum: Wm. (Bill) Peters: "Astrophotography"; D. Fisher: "Evolution of Galaxies"; B. Hval: "Creation of Matter"; Film: "Clouds of Venus".

February 9—C. Brewster, M.Sc.: "Magnetic Storms"; Film: "Mariner II".

March 9—T. Swaddle, Ph.D.: "Chemistry of Stars"; Film: "This is Aeronutronics".

April 13—L. A. Bayrock, Ph.D. (exchange speaker from Edmonton Centre): "Alberta Meteorites"; Film: "Our Captive Space".

May 11—S. Wieser, B.Sc.: "Planets for Man"; Film: "Exploration of the Planets".

September 14—Miss G. P. Panko: "Art in Education"; Film: "Universe".

October 12—D. J. I. Fry, Ph.D.: "Stonehenge"; Film: "Auroral Rocket".

November 9—F. L. D. Staplin of Imperial Oil Ltd.: "Organic Materials from Outer Space"; Film: "Inquisitive Giant".

December 14—W. Stilwell, M.A.: "Reminiscences of Trinidad"; Film: "Eight Months to Mars". This was the Centre's Annual Dinner Meeting.

During the year, several joint public star nights were held in conjunction with the Calgary Centennial Planetarium. Classes towards badges in Astronomy were held for various Scout groups and talks to a number of schools were given on request. Many members assisted in the judging of entries to the Annual Science Fair.

A farewell dinner and presentation were given in May for Mr. Al McQuarrie of the Calgary Meteorological Office. Mr. McQuarrie, one of the original pioneer members of the Calgary Centre, was transferred to Victoria, British Columbia.

(Mrs.) JOAN X. WIESER, *Secretary*

EDMONTON CENTRE

For the year ending October 31, 1966, 10 regular and 6 meetings of Executive and Council were held. The meetings, with one exception, were held in the Queen Elizabeth Planetarium through the courtesy of the City of Edmonton Parks and Recreation Department. The features during the year included:

November 4, 1965—John O'Keefe, Ph.D.: "Tektites and Meteorites".

December 9—Gary Finley: "Big Lake Observatory".

January 13, 1966—George Williams: "Stonehenge".

February 10—A. Vankatesan, Ph.D.: "Solar and Terrestrial Relationships".

March 10—Dave A. Rodger: "Planetaria".

April 14—John Howell: "The Search for Planet X".

May 12—George Williams: "Above the Horizon".

June 9—Bob Broughton: "Pictures From Satellites".

September 8—Franklin Loehde: "Skies Over Mexico".

The Observers Group completed the construction of the observing shelter at the University of Alberta Ecology Farm. Franklin Loehde represented the Centre at the General Assembly in Winnipeg and reported on the activities at the June meeting.

ANGUS D. SMITH, *Secretary*

HAMILTON CENTRE

During the 1965-66 season from October to May, 3 Council meetings were held and 8 regular meetings, the latter in the Physical Sciences Building of McMaster University. The programs of the Centre included:

October 7, 1965—K. O. Wright, Ph.D.: "The New Astronomy"; Annual Election of Officers.

- November 4—C. A. McDonald: "Solar Flares"; E. Ostrosser: "An Introduction to Astronomy".
- December 2—R. V. Nielson: "The End of the Universe"; Donald MacRae, Ph.D.: "Are There Pingos on the Moon?".
- January 6, 1966—R. McCallum: "E-MC?"; Martin Johns, Ph.D.: "Physical Basis for Stellar Evolution".
- February 3—L. V. Powis: "Coherent Light"; Henry P. Schwartz, Ph.D.: "Meteorites and Tektites".
- March 3—W. A. Fautley: "On Viewing the Moon"; J. A. Winger: "The Depths of Space".
- April 7—E. A. Colquhoun: "Natural Satellites"; W. Wight and B. Drew of the Kitchener Astronomical Society: "A Simple Problem in Celestial Mechanics" (an exchange program with J. A. Winger and J. G. Craig).
- May 5—Junior Night: Robin Allen: "Rocketry"; Michael Kinal: "Radio Telescopes"; Les Chadwick: "Radio Sources"; Doug Olmstead: "Electromagnetic Spectrum"; Don Gracianno: "Antennas"; Doug Craig: "Recorders and Recording".

On the Annual Meeting night, a banquet was held for our Council members and their wives and honoured guests were Dr. K. O. Wright, our National President, and Mrs. Wright, and Rev. Norman Green, our National Secretary, and Mrs. Green.

Six of our members were awarded Membership Certificates.

A display of telescopes, optics and viewing, etc. in "Activities Festival 66" sponsored by the Parks and Recreation Department of the Town of Burlington, Ontario, took the place of our annual field nights.

Our membership averages about 80 persons; of these, about 20 are students and this junior section hold their own meetings and elect their own officers.

Two very successful field nights were held at the Y.M.C.A., Hoover Park, about fifteen miles from Hamilton.

David Pearson of Stoney Creek was awarded a one-year membership in the Society for his excellent display in the astronomical section of the Hamilton Science Fair.

LESLIE V. POWIS, *Secretary*

LONDON CENTRE

During 1966, five meetings were held at the University of Western Ontario. A 6-inch Nitron refractor has been installed on the University campus and is at the disposal of members after meetings, weather permitting. Mr. Antal Markus is constructing an observatory and when completed it will be available for use by members. It is hoped that a modest observational program may be undertaken. The program for meetings is as follows:

- January 28—Antal Markus: "An Amateur Observatory"; John J. Caldwell: "The Planet Pluto".
- March 3—Annual H. R. Kingston Memorial Lecture: N. W. Broten, Ph.D., Radio Astronomy Section, N.R.C.: "Thirty Years of Radio Astronomy".
- April 1—Amelia Wehlau, Ph.D., Department of Mathematics and Astronomy, U.W.O.: "Globular Star Clusters"; W. Gordon Graham: "Handbook Study".
- November 3—David Gray, Ph.D., Department of Astronomy, U.W.O.: "Gas, Dust and Hot Stars".
- December 16—J. M. Moorhead, Department of Astronomy, U.W.O.: "The Aging of Stars"; John Rice: "Handbook Study".

W. GORDON GRAHAM, *Secretary*.

MONTREAL CENTRE

During the past year, four meetings of the Board of Directors were held at our observatory, and eight regular monthly meetings were held in the Macdonald Physics Building, McGill University, with programs as follows:

- October 21, 1965—Annual Meeting; Election of Officers; Presentation of Awards and Membership Certificates; K. O. Wright, Ph.D., National President of the R.A.S.C.: "The New Astronomy".
- November 11—Films: "Alouette", "The Spectrograph" and "Atoms For Space".
- December 9—Film: "The Mystery of Stonehenge".
- January 13, 1966—Dean D. L. Mordell, Faculty of Engineering, McGill University: "Some Ideas on the Conquest of Space".
- February 10—Rev. Father M. Buist, College Jean de Brebeuf: "Seismology".
- March 10—R. Doig, Ph.D., Department of Geology, McGill University: "How We Know the Age of the Earth".
- April 14—R. Butler, Queen's University, Kingston: "Radio and Optical Observations of Blue Stellar Objects and Quasars".
- May 12—Townsend Lecture by G. M. Clemence, Ph.D., Yale University: "The Measurement of Time".

Our thanks go to Dr. T. F. Morris for his work as Program Chairman, and to Mrs. W. Clarke, convener for the Social Committee, for the organization of these meetings, and to McGill University for again providing us with the facilities for our public meetings.

Attendance at the Observatory totalled 2,490 (1,269 on Saturday nights); 17 visiting groups were entertained with a total attendance of 602 members and 72 members were present at special section meetings.

McGill University provided a new staircase to the field leading to our observatory and trimmed the trees nearest to the building. Several important repairs and improvements were made to the building and to the 6-inch refractor.

Because of weather conditions, our annual Star Night was held indoors but the attendance was very good. Twenty instruments were on display, two films were shown and an illustrated talk was given.

The Sidney Sundells again invited members for a Deep Sky Wonder Night at their summer home in Vermont and excellent observing conditions were enjoyed.

Observational activities have included the following: 27 reports of Lunar occultations (10 members); Yale University program on a grazing occultation near St. Hyacinthe, Quebec (2 members); planetary (9 members); sun-spot activity; aurora (22 observers); Comet and Nova Section (13 members); meteor observations; double-star group was started, with 293 observations made of 145 stars; variable stars (2 members); satellites Echo I, Echo II and Pageos I have been systematically observed by 13 members with thanks to Jim Low for making the predictions for the passage available.

ELLA DACK, *Secretary*.

ST. JOHN'S CENTRE

During the year, this Centre's first, eight regular meetings and three Executive meetings were held subsequent to becoming a Centre of the R.A.S.C. in February. The programs were as follows:

- October 18, 1965—Organizational meeting.
- November 22—Adoption of Constitution; William Miller, Satellite Tracking Station: "The Satellite Triangulation Program and Its Practical Application in Canada".
- December 20—Mrs. Dora Russell: "Winter Constellations".
- January 25, 1966—S. J. S. Woods: "Optics"; Talk on Star Identification.
- February 21—Hugh Lilly, M.Sc.: "The Evolution of the Earth from Cosmic Matter".
- March 21—Selection of film showings.
- April 18—Planetarium demonstration of spring and summer skies.

May 16—Captain A. J. Provan: "Movements of the Planets" (illustrated further in the planetarium).

June 15—R. G. Knight: "What Is My Universe?"; Discussion.

Two trips to the Satellite Tracking Station at Pouch Cove in March and April were well attended.

As an Education Week project, two members visited all city high schools and distributed special leaflets about the R.A.S.C.

Three observing sessions were held at Karwood Cabins, Donovans, and thanks are extended to the Browns of Karwood, whose interest and kindness made these field trips possible.

The Centre has a paid-up membership of 22.

(MRS.) DORA RUSSELL, *Secretary*.

NIAGARA FALLS CENTRE

During 1966 there were 8 regular meetings (held at the Niagara Falls Collegiate and Vocational Institute) and 5 meetings of our Executive Council. Special programs, in addition to the regular meetings and Star Nights, were presented for two different youth organizations. The programs and speakers for the year were as follows:

January 18—John Booth, M.D.: "Quasars and Quasi-Stellar Sources".

February 15—Raymond Lansdale: "Constellation of Orion"; Hugh Maclean: "Spectroscopic Parallax"; Al Kindy: "Moon Features".

March 15—Jos. Hauzer: "The Rings of Saturn and Their Edgewise Presentation".

April 19—Hugh Maclean: "Sidereal Time".

May 17—Robert Doran: "Radio Astronomy".

May 28—Public Star Night.

June 25—Public Star Night.

October 18—John Booth, M.D.: "Galactic Star Clusters". Election of Officers.

November 10—Annual Dinner (held at the Coachlight Restaurant, Niagara Falls). Guests were Mr. Malcolm M. Thomson, National President of the Society, and Mrs. Thomson. Mr. Thomson's talk "Time", was illustrated with slides of some of the past and present time keeping devices used at Ottawa.

December 20—Hugh Maclean: Demonstration of the Ronchi method of testing mirrors.

ROBERT C. DORAN, *Secretary*.

OTTAWA CENTRE

At the Annual Meeting in 1966 Dr. V. Gaizauskas gave the retiring presidential address on "Galileo: Controversial Hero of Science". Other topics during the year ranged from that of the November meeting when Dr. Sida of Carleton University discussed "Cosmology, a Study in Unsolved Problems" to the meeting last February when Mr. Jeffery described "Radio Telescope Design and Construction". Dr. John Chapman of D.R.T.E. talked to us about "Some New Results from the Allouette Satellite" in October while earlier in April Mr. Donald Davies, Director of the Dow Planetarium in Montreal, described the Planetarium under the title "A New Sky for a New City". In November we had a topical account of "Three Recent Fire Balls" from Drs. Douglas, Halliday and McIntosh.

A most successful film night was held at the NRC Sussex Drive Auditorium in March when Dr. P. M. Millman introduced "The Mystery of Stonehenge" and to start off our fall season in September four films were shown that were representative of research in the fields of space and astronomy in Great Britain, the United States and Canada under the general title "Three Nations in Space".

The Chairmanship of the Observer's Group recently passed to Mr. Tom Tothill from Dr. Archie Gillieson. The use of the Small Dome has continued successfully,

thanks to the kindness of Dr. John Hodgson, Director of the Dominion Observatory. The Group recently had the good fortune to acquire access to the Defence Research Board Quiet Site a few miles up the Ottawa River, through the kind permission of Mr. F. T. Davies, Chief Superintendent of D.R.T.E. Here they have the use of a 20 foot radio telescope and the associated building as well as an interferometer antenna complex. The use of these instruments should prove interesting and challenging. Dr. F. P. Lossing, a long time enthusiast and member of the Group, has kindly loaned his 10" Newtonian telescope for use at this site.

L. R. McNARRY, *Secretary.*

CENTRE DE QUEBEC

1966 sera pour le Centre de Québec une année mémorable. En effet, au mois de juin, il y eut des élections et la grande majorité de l'exécutif fut remplacé. Depuis cette date, le conseil se réunit au début de chaque mois et procède d'une façon démocratique et conformément aux statuts. Son mandat est particulièrement chargé parce qu'il y a beaucoup de problèmes à régler.

Nous organisons, au début de chaque mois, une soirée ou non seulement les membres sont invités mais aussi le public en général. Il y a une conférence qui est habituellement suivie d'un film sur le sujet. Si ces soirées ont commencées avant juin, c'est grâce à l'initiative de deux membres qui en prirent eux-même les responsabilités. Elles ont généralement lieu à l'Université Laval qui a gratuitement fourni une salle.

- 23 septembre 1965—Grande soirée à l'Université Laval où plus de trois cent cinquante personnes assistent à une conférence sur la radio-astronomie. Conférencier Claude Frémont professeur à l'Université. Durant l'intermission, un goûté est gracieusement servi. Ensuite il y eut la projection d'un film sur le sujet.
- 1er mars 1966—Conférencier-Dr Paul Marmet. Sujet: Nouvelles découvertes relatives à la vision des couleurs. Suivi de démonstrations sur la reproduction celles-ci.
- 5 avril—Conférencier-Yvon Dufour—L'observation astronomique à l'oeil nu. Projection de diapositives.
- 3 mai—Conférencier-Jean-Paul Boudreault. Promenade dans la Voie Lactée. Projection de diapositives.
- 12 et 13 juillet—Soirée d'observation à l'observatoire de Yvon Dufour, au mont Bélair, 6 autres télescopes étaient à la disposition des membres.
- 2 novembre—Conférencier-Dr Paul Marmet, du Département de Physique de l'Université Laval. Symétrie dans note Univers. Projection de diapositives et d'un film.
- 5 octobre—Conférencier-Michel De Celles, professeur. L'apport de l'Astronomie aux sciences physiques. Projection d'un film.
- 5 décembre—Dr Larkin Kerwin. L'arpentage de l'Univers. Projection d'un film.

Le Centre a de plus commencé la publication mensuel d'un bulletin qui est très apprécié des membres si on en juge par leur témoignage. Ce bulletin s'enrichit d'ailleurs à tous les mois.

YVON DUFOUR, *Le secrétaire.*

TORONTO CENTRE

The Toronto Centre held eleven regular meetings in 1966, with speakers and subjects as follows:

- January 15—R. Terence Dickinson, Toronto Centre: "An Amateur Visits the Great Observatories".
- January 28—Gerald Gold, M.D., and Mrs. Gold, Toronto Centre: "The Callanish Stones"; F. C. Hamilton, M.D., Toronto Centre: "Where Captain Cook observed the Transit of Venus".

- February 11—Members' Night: Demonstration of "Telescope making and Astronomical Photography".
- February 25—John F. Heard, Ph.D., David Dunlap Observatory, University of Toronto: "Personalities in Astronomy, Past and Present".
- March 11—V. Gaizauskas, Ph.D., Dominion Observatory, Ottawa: "Eruptions on the Sun".
- March 25—W. H. Clark, Ph.D., David Dunlap Observatory, University of Toronto: "Gaseous Nebulae".
- September 16—Delegates from the Toronto Centre: "A Review of the 1966 General Assembly".
- September 23—Visit to David Dunlap Observatory.
- October 14—A. G. W. Cameron, Ph.D., Belfer Graduate, School of Science, Yeshiva University, New York, N.Y.: "Intelligent Life in the Universe".
- November 18—Geo. Waltenstein, Ph.D., Chairman, Department of Astronomy, University of Washington, Seattle, Washington: "Helium, Carbon and Nitrogen Stars, Clues to Stellar Evolution".
- December 9—J. A. W. McCulloch, Meteorological Branch, Department of Transport: "Weather Satellites".

In addition, there were nineteen meetings of the Telescope Makers Group with an average attendance of twenty. At least twenty-four telescopes were reported finished during the year, representing all sizes from five to ten inch mirrors. A number of twelve and one half inch mirrors are currently being worked on. At the invitation of Mr. Ben Drew, a special demonstration of Telescope Making was presented at Waterloo University.

The telescope display was provided as usual at the Canadian National Exhibition. The weather was favourable on all but two of the fifteen nights. Fortunately, the moon was visible in the evening sky for the whole period. The passages of Echo I were observed nearly every night. There were always six telescopes on display and on one night, thirteen. Attendance was improved over 1965 and an estimated 6,000 visitors viewed our presentation.

Eight Sky-Gazing Nights were arranged in various parks in the Metropolitan Toronto area, during the summer months. Only one of these was rained out. Besides the telescopes set up by our members, various films on astronomy or space exploration were shown. The Centre again arranged for a reprinting of the revised issue of "Sky Facts" leaflet for distribution at the public Sky-Gazing Nights, the Canadian National Exhibition, and for visitors to the David Dunlap Observatory. Sky Facts were also made available to teachers and other interested groups.

In addition to the scheduled events, a special Sky-Gazing Night was held in Champlain Park, Orillia, at the invitation of the local film council. Over 600 enjoyed this opportunity to view the skies through telescopes and to see several films.

C. E. HODGSON, *Secretary*.

VANCOUVER CENTRE

The Vancouver Centre continued to hold its monthly lecture meetings in the Hebb Theatre on the campus of the University of British Columbia. The Telescope and Observers Section held regular monthly meetings in the Hennings Building, U.B.C. The programs were as follows:

- January 11—Annual Dinner meeting in the Faculty Club, U.B.C., G. A. H. Walker, Ph.D.: "Interstellar Smog".
- February 8—W. L. H. Shuter, Ph.D.: "Radio Astronomy Today".
- March 8—W. R. Danner, Ph.D.: "Geology in Space".
- April 12—Annual Members' Night: Steve Lambert: "Asteroids"; E. Pfannenschmidt: "Techniques of Planetary Observation"; Film: "Orbiting Solar Observatory".

October 11—M. W. Ovenden, Ph.D.: “The Formation of the Constellations”.

November 8—G. J. Odgers, Ph.D.: “The Queen Elizabeth II Telescope”.

December 13—General Meeting and Election of Officers; Film: “Gemini 6 and 7”.

The Centre membership remains at approximately 70. The monthly Newsletter of the Telescope and Observers Section was published throughout the year mainly due to the efforts of H. Ross and E. Pfannenschmidt.

P. H. REYNOLDS, *Secretary*.

VICTORIA CENTRE

The Centre held eight regular, five Summer Course, and four Council meetings during the year. All meetings, as well as the Friday evening observational program, were held in facilities of the University of Victoria. The Centre also participated in the annual Fall Hobby Show. The program included:

January 12—R. Dancey: “Tools, Pitch and Patience”.

February 9—S. C. Morris, Ph.D.: “The Evolution of Stars”.

March 9—C. D. Scarfe, Ph.D.: “Spectroscopic Parallaxes”.

March 23—J. F. Heard, Ph.D.: “Personalities in Astronomy, Past and Present”.

April 13—L. Binnendijk, Ph.D.: “Eclipsing Binaries”.

August 1—E. K. Lee: “Introduction to the Heavens”.

August 8—E. H. Richardson, Ph.D.: “The Sun’s Family”.

August 15—E. E. Bridgen: “Beyond the Solar System”.

August 22—Visit to Dominion Astrophysical Observatory.

August 29—S. C. Morris, Ph.D.: “Recent Developments in Space Exploration”.

October 12—W. R. H. White, Ph.D.: “Explosion Seismology”.

November 9—S. Wigen: “Tides and Currents of the B.C. Coast”.

December 7—Annual Dinner; election of officers; K. O. Wright, Ph.D.: “The Mount Kobau Observatory”.

The Centre regrets the loss through death of Mr. R. Peters, Mr. W. Simpson-Baikie, and Dr. R. M. Petrie.

W. DAMER, *Secretary*.

WINDSOR CENTRE

Four Executive meetings and five regular meetings were held with the following programs:

March 15—James M. Meredith: “Current Events”; Leslie Smith: Educational Talk; Michael Hastings-Trew, Andrew Taylor, Henry Lee and Cyril Hallam: “Panel Discussion of Meteorites”.

April 19—Michael Hastings-Trew: “Current Events”; Gus A. Nyberg: “Double Stars and the Current Sun-spots”; Leigh Lachapelle of the Detroit Astronomical Society: “The 1966 Eclipse and the Detroit Astronomical Society”.

May 21—Bus trip to Ann Arbor, Michigan, visiting the new Physics-Astronomy Building of the University of Michigan and a Planetarium show.

June 21—Telescopic observations of stars at D. C. Bawtenheimer’s observatory, Poplar Lodge; Arthur Rae: “Delegate’s Adventure at the General Assembly in Winnipeg”.

October 18—D. C. Bawtenheimer: “Current Events”; Malcolm M. Thomson, M.Sc., Dominion Observatory, Ottawa: “Keeping Canada on Time”.

November 22—Michael Hastings-Trew: “Devising and Teaching of the six-week course for the Starman’s Badge of the Boy Scouts”; Gus A. Nyberg: “Astronomical Highlights of my Trip to Sweden”. This Annual Meeting night included the election of officers and a social hour.

1966 was highlighted by the search for the detonating fireball, which passed over Essex County in December, by members of our Centre in addition to personnel from the Geological Survey of Canada, Michigan State University, Essex County Sportsmen and local residents.

JAMES M. MEREDITH, *Recorder.*

WINNIPEG CENTRE

Seven regular meetings and five Council meetings were held during 1966. The speakers and topics were:

January 29—J. N. R. Scatliff, M.D., D. R. Patterson, W. W. W. Wright, B. F. Shinn, L.R.A.M., L.L.C.M.: Panel discussion “Problems in Observing”.

February 26—J. D. Herbert, M.A.: “A New Concept for a New Museum”.

March 28—W. Elliott: “Mirror Testing by Television Techniques”.

May 2—Junior Members’ Night: P. Moffet: “Coupling Television to the Telescope”; P. O’Connor: “Quasars Radio Sources”; A. Falk: “Measuring Stellar Temperatures”.

October 14—J. N. R. Scatliff, M.D., B. F. Shinn, L.R.A.M., L.L.C.M.: “Finding Astronomical Objects”; J. N. R. Scatliff, M.D.: “Introduction of the Solar Observing Program”.

November 10—D. H. Gallagher, B.Sc.: “The Winnipeg Planetarium — Progress and Plans”.

December 9—Annual Meeting and Election of Officers; T. Cairns: “Palomar”.

The General Assembly of the Society was held from May 20-22 at the University of Manitoba.

Several observation nights were held during the summer.

JOHN MOHLER, *Recorder.*

THE ROYAL ASTRONOMICAL SOCIETY
BALANCE SHEET
(With comparative figures for 1965)

A S S E T S

	<u>1966</u>	<u>1965</u>
CURRENT ASSETS		
Cash on hand and in bank	\$ 8,210.50	\$ 3,880.00
Accounts receivable	4,220.34	7,830.00
Grant receivable from Province of Ontario	1,000.00	-
Accrued debenture interest	78.75	78.00
Prepaid expenses and deferred charges	<u>346.98</u>	<u>664.00</u>
	<u>\$13,856.57</u>	<u>\$12,454.00</u>
 INVESTMENT		
Canada Permanent Mortgage Corporation 5% debenture, maturing 1968	<u>\$ 3,000.00</u>	<u>\$ 3,000.00</u>
 FIXED ASSETS (at cost)		
Land — 252 College Street	\$17,000.00	\$17,000.00
Building	17,500.00	17,500.00
Furniture and equipment	2,958.78	2,958.00
Apartment equipment	<u>808.62</u>	<u>630.00</u>
	<u>\$38,267.40</u>	<u>\$38,088.00</u>
Less: Accumulated depreciation	<u>7,400.92</u>	<u>6,588.00</u>
	<u>\$30,866.48</u>	<u>\$31,500.00</u>
Library — Nominal value	<u>\$ 100.00</u>	<u>\$ 100.00</u>
	<u>\$47,823.05</u>	<u>\$47,057.00</u>

APPROVED ON BEHALF OF THE NATIONAL COUNCIL:

M. M. Thomson, *President*
R. R. Broadfoot, *Treasurer*

Y OF CANADA
BER 31, 1966
ember 31, 1965)

LI AB IL IT I E S A N D S U R P L U S

	<u>1966</u>	<u>1965</u>
CURRENT LIABILITIES		
Accounts payable and accrued charges	\$ 16.20	\$ 20.03
DEFERRED REVENUE		
Advance on future grants by Government of Canada	\$ 3,500.00	\$ —
Membership fees for ensuing year	2,545.40	3,552.09
Advance subscriptions to Journal and Handbook	4,448.35	5,131.40
Advertising for future publications	1,810.00	2,095.00
Unappropriated life membership fees (per statement)	<u>3,122.63</u>	<u>2,873.65</u>
TOTAL LIABILITIES	<u>\$15,426.38</u>	<u>\$13,652.14</u>
SURPLUS (per statement)	\$30,560.52	\$31,375.00
LIBRARY FUND RESERVE (per statement)	<u>1,819.95</u>	<u>2,010.00</u>
	<u>\$32,380.47</u>	<u>\$33,385.00</u>
	 <u>\$47,823.05</u>	 <u>\$47,057.17</u>

Prepared without complete audit by Morris Altman, Chartered Accountant.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
STATEMENT OF GENERAL REVENUE AND EXPENSE
FOR YEAR ENDED DECEMBER 31, 1966

(With comparative figures for year ended December 31, 1965)

R E V E N U E	<u>1966</u>	<u>1965</u>
Membership fees		
R.A.S.C. Centres	\$ 6,287.43	\$ 5,339.75
Individual members	3,019.50	2,287.00
Life membership reserve — Annual appropriation	251.02	226.02
	<u>\$ 9,557.95</u>	<u>\$ 7,852.77</u>
Grants and Donations		
Government of Canada	\$ 5,000.00	\$ 3,500.00
Province of Ontario	1,000.00	1,000.00
Members' contributions	35.00	24.50
	<u>\$ 6,035.00</u>	<u>\$ 4,524.50</u>
Publications		
Journal of the R.A.S.C.	\$ 3,575.60	\$ 1,596.96
Observer's Handbook	6,605.05	6,827.20
Special issues and reprints	1,429.30	2,960.43
Publication fees	1,100.00	1,470.00
	<u>\$12,709.95</u>	<u>\$12,854.59</u>
<i>Add:</i> Foreign exchange premiums	560.75	481.36
	<u>\$13,270.70</u>	<u>\$13,335.95</u>
<i>Deduct:</i> Agents' discounts	878.53	949.40
	<u>\$12,392.17</u>	<u>\$12,386.55</u>
Advertising	2,095.00	1,445.00
Sale of Insignia	168.97	125.50
Debenture Interest	157.50	157.50
	<u>\$30,406.59</u>	<u>\$26,491.82</u>
TOTAL REVENUE		
E X P E N S E		
Publications	\$19,517.01	\$18,127.64
Staff salaries	5,720.00	5,565.00
Stationery, printing and supplies	856.81	1,176.51
Postage and express (less amounts charged)	716.63	853.92
Telephone	189.00	164.46
Subsidies to Centres of the R.A.S.C.	300.00	—
Annual life membership grants to R.A.S.C. Centres	189.50	133.50
General Assembly	418.58	615.65
Library expense	—	180.22
General and office expenses	417.51	227.67
Insignia, medals and awards	235.35	275.13
Contributions to staff pension fund	460.41	381.21
Contributions to Memorial funds	150.00	550.00
Depreciation of office furniture and equipment	295.87	295.88
	<u>29,466.67</u>	<u>28,546.79</u>
TOTAL EXPENSE		
NET SURPLUS (DEFICIT) FOR YEAR	<u>\$ 939.92</u>	<u>(\$ 2,054.97)</u>

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
STATEMENT OF BUILDING REVENUE AND EXPENSE
FOR YEAR ENDED DECEMBER 31, 1966

(With comparative figures for year ended December 31, 1965)

	<u>1966</u>	<u>1965</u>
REVENUE		
Rentals for space not occupied by Society	\$ 2,855.00	\$ 2,856.00
EXPENSE		
Property taxes	\$ 757.39	\$ 700.84
Fuel	427.50	315.00
Light, gas and water	255.58	281.31
Maintenance and repairs	2,584.16	113.02
Insurance	66.41	60.10
Depreciation of building	437.50	437.50
Depreciation of equipment	80.86	63.09
TOTAL EXPENSE	<u>\$ 4,609.40</u>	<u>\$ 1,970.86</u>
NET SURPLUS (DEFICIT) FOR YEAR	<u>(\$ 1,754.40)</u>	<u>\$ 885.14</u>

STATEMENT OF SURPLUS

Surplus at beginning of year	\$31,375.00	\$32,544.83
General account — Surplus (deficit) for year	939.92	(2,054.97)
Building account — Surplus (deficit) for year	(1,754.40)	885.14
Net surplus at end of year	<u>\$30,560.52</u>	<u>\$31,375.00</u>

STATEMENT OF UNAPPROPRIATED LIFE MEMBERSHIP FEES

Balance at beginning of year	\$ 2,873.65	\$ 2,924.67
Add: Life membership fees received during year	500.00	175.00
	\$ 3,373.65	\$ 3,099.67
Deduct: Appropriation for year to General Account	251.02	226.02
Balance at end of year	<u>\$ 3,122.63</u>	<u>\$ 2,873.65</u>

STATEMENT OF LIBRARY FUND RESERVE

Balance at beginning of year	\$ 2,010.00	\$ 1,010.00
Add: Contributions received during year	—	1,000.00
	\$ 2,010.00	\$ 2,010.00
Deduct: Appropriation for purchase of books	190.05	—
Balance at end of year	<u>\$ 1,819.95</u>	<u>\$ 2,010.00</u>

REPORTS

RECEIPTS	Calgary	Edmonton	Hamilton	Kingston	London	Montreal	
Balance from 1965		\$ 306.36	\$ 643.44		\$214.91		
Membership Fees	NOT SUBMITTED	368.00	408.00	NOT SUBMITTED	34.50	NOT SUBMITTED	
Donations							
Educational Activities		442.20					
Annual Dinner							
Sales of Handbooks, etc.		4.00	5.00				8.00
Bank Interest & Exchange		12.11	10.23				5.10
Income from Investments							11.25
Life Member Grants		3.00	6.00				2.00
General Assembly							
Miscellaneous		93.00	5.00				
Subsidies							
Total		<u>\$1,228.67</u>	<u>\$1,077.67</u>		<u>\$275.76</u>		

DISBURSEMENTS						
Fees remitted to N.O.		219.20	273.00		20.70	
Library						
Meetings & Newsletters		697.96	58.54		62.90	
Annual Dinner						
General Assembly			50.00			
Equipment & Supplies			48.95			
Office & Admin.		4.55	116.06		7.00	
General Expenses		7.00	6.85			
Handbooks, etc.					4.80	
Investments, etc.						
Balance carried to 1967		299.96	524.27		180.36	
Total		<u>\$1,228.67</u>	<u>\$1,077.67</u>		<u>\$275.76</u>	

TORONTO CENTRE SPECIAL PURPOSE	
(included above)	
Balance as at 31 December, 1965	\$34
C.N.E. Grant, 1966	
Bank and Investment Interest	
Balance 31 December, 1966	\$41

AS OF CENTRES

	Ottawa	Québec	St. John's	Toronto	Vancouver	Victoria	Windsor	Winnipeg
91	\$ 382.35			\$ 827.18	\$500.03	\$2,021.24	\$ 36.27	\$ 58.02
90	943.50		121.50	3,117.44	348.00	373.00	242.00	474.00
	45.50			200.00				
						34.72	17.06	
75	279.00				105.00	92.00		
90	156.00				5.00	8.00	4.00	5.00
96	9.87			297.13	14.30	70.51	2.20	
	34.00			48.00	10.00	20.00		1.50
								220.00
00	7.63				17.55			
							100.00	
12	\$1,857.85		\$121.50	\$4,489.75	\$999.88	\$2,619.47	\$401.53	\$760.62

NOT SUBMITTED

70	566.10		72.90	1,869.80	31.50	307.30	145.50	285.90
	74.14							
90	59.06			748.40	46.50	12.26	37.50	2.10
	279.00				135.58	119.83		
								357.07
01	45.02						40.00	12.99
74	67.00		5.00	559.55	81.32	49.48	21.28	84.91
90	16.50				.45	44.50	1.80	11.10
	124.80					28.75	75.00	
					15.22		10.81	
17	626.23		43.60	1,312.00	689.31	2,057.35	69.64	8.65
12	\$1,857.85		\$121.50	\$4,489.75	\$999.88	\$2,619.47	\$401.53	\$760.62

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
OFFICERS AND COUNCIL OF THE CENTRES FOR 1967

CALGARY CENTRE

Honorary President—T. A. LINK, PH.D. *Vice-President*—W. H. STILWELL, MA.
President—J. F. WRIGHT, 218 - 4th Ave. N.E. *Recorder*—F. J. HOWEL
Secretary—MRS. J. F. WRIGHT, 218 - 4th Ave. N.E. *Librarian*—H. B. DATE
Treasurer—J. H. COOPER *Editor*—S. LITCHINSKI
Council—G. SKOREYKO; K. BAIS; N. COY; D. J. FRY; MRS. J. NEWTON; W. CANTRILL; K. B. MEIKLEJOHN; E. M. ROGERS; T. SWADDLE.

EDMONTON CENTRE

Honorary President—E. S. KEEPING, B.SC., A.R.C.S. (LOND.), D.I.C.
President—GEORGE CUMMING, 11023 - 89 Ave. *Librarian*—D. CROSBY
Secretary—GEORGE WILLIAMS, 10216 - 114 St. *Editor*—DAVE A. RODGER
Treasurer—MRS. G. ARCHBOLD *Asst. Editor*—W. FRANKEL
Director, Observations—FRED TAUBER *Director, Educational Activities*—G. SHERMAN
Council—W. J. P. CABLE, ANGUS SMITH

HALIFAX CENTRE

Honorary President—REV. M. W. BURKE-GAFFNEY, S.J.
President—ALAN WHITMAN, 314 Blythwood Ave., Riverview Hts., Albert Co., N.B.
Past President—D. R. BAGG

HAMILTON CENTRE

Honorary President—W. T. GODDARD, B.S., E.E. *1st Vice-President*—E. A. COLQUHOUN
President—J. G. CRAIG, B.SC., 872 Concession St. *2nd Vice-President*—G. THEDE, B.SC.
Secretary—L. V. POWIS, 22 Orchard Dr., Box 84, Watertown, Ont. *Curator*—G. VANSICKLE
Treasurer—C. A. McDONALD
Council—JAMES WINGER; W. A. FAUTLEY.

KINGSTON CENTRE

President—PETER FOULGER, Leonard Hall, Queen's University
Secretary-Treasurer—TIMOTHY GARRARD, Brockington House, Queen's University

LONDON CENTRE

Honorary President—J. W. HAYNES *Librarian*—MISS HIGGINS
President—GRAYDON R. SYMONDS, R.R. No. 1, Hyde Park
Secretary-Treasurer—GORDON GRAHAM, 1201 Richmond St., Apt. 518

MONTREAL CENTRE

Honorary President—H. F. HALL, B.A., L.R.E. *Honorary Vice-President*—R. H. HARDIE, PH.D.
President—J.-P. JEAN, M.D., 2963 Cote Ste. Catherine Rd. (26) *Vice-President*—B. RAWLINGS, B.SC.
Secretary—W. JUTTING, 1140 Graham Blvd. (16) *Recorder*—W. J. CULLINAN
Treasurer—A. H. CAPPER *Librarian*—D. FRAPPIER
Director of the Observatory—L. DUCHOW *Director of Observations*—MISS I. K. WILLIAMSON
Board of Directors—H. B. BERRYS; K. T. CHALK; G. FORTIER, M.D.; M. LAZAR; J. LOW; K. MCNAMARA, B.A.; T. F. MORRIS, PH.D.; C. PAPANOSMAS.

CENTRE D'ASTRONOMIE DE MONTREAL

Président—PHILIPPE MAILLOUX, 5435 rue Monsabre (5) *Vice-président*—JEAN ASSÉLIN
Secrétaire—MME ROLLAND MATTEAU, 5435 rue Monsabre *Bibliothécaire*—ROGER BONIN
Rapporteur—PIERRE LEMIEUX *Bibliothécaire adjoint*—GAËTAN CHOLETTE
Rapporteur—MICHEL FANNETON *Directeur Section d'optique*—HENRI SIMARD
Directeur des observations—JEAN-GUY MARCOTTE
Directeur adjoint section optique—ADELARD ROUSSEAU
Directeur adjoint observations—MICHEL REBETEZ
Directeurs—Mlle GEORGETTE LEMOYNE; Mlle IRENE GAUTHIER; ROMEO CRIGNON; GASTON
LEBRUN; JEAN NAUBERT; ROLLAND NOEL DE TILLY; MARC DURAND; ROLAND DESROSIERS.

NIAGARA FALLS CENTRE

President—H. N. A. MACLEAN, 88 Lorne Ave., St. Catharines, Ont. *Vice-President*—JOSEPH HAUZER, B.SC., Chem. Eng.
Secretary—R. C. DORAN, M.B.A., 250 South Fourth St., Lewiston, N.Y. 14092, U.S.A.
Treasurer—A. G. KINDY *Director of Publications and Publicity*—GRAYSON C. GARDNER
Council—H. N. A. MACLEAN; JOSEPH HAUZER.

OTTAWA CENTRE

Honorary President—HOYES LLOYD, M.A.
President—E. H. DUDGEON, M.A.S.C., Div. of Mechanical Engineering, N.R.C.
1st Vice-President—F. R. PARK, B.S.C. *2nd Vice-President*—A. H. GILLIESON, PH.D., F.C.I.C.
Secretary—L. R. McNARRY, M.S.C., Radio & Electrical Engineering Div., N.R.C.
Treasurer—L. A. HIGGS, PH.D. *Recorder*—MRS. M. W. GREY
Librarian—S. A. MOTT *Director of Observations*—J. T. TOTHELL
Council—G. A. GRANT; A. A. GRIFFIN B.A.; J. L. HORWOOD, B.A.; R. L. HUTCHINSON, B.S.C.; J. J. LABRECQUE, M.S.C.

CENTRE DE QUEBEC

Président—PAUL MARMET, PH.D., 1001 rue de Grenoble (10) *Vice-président*—L. G. GAGNON
Secrétaire—G. Y. DUFOUR, 1628 rue Ranvoize (10) *Rapporteur*—MME C. DEMERS
Trésorier—G. BERGERON *Bibliothécaire*—J. THIBAUT
Directeur des Conférences—C. FREMONT *Directeur des Observations*—G. LAFONTAINE
Conseillers—L. SANCHE; C. E. LESSARD; Y. HUOT; C. HAMEL.

ST. JOHN'S CENTRE

President—CAPT. A. PROVAN, 10 Roland Drive, Mount Pearl, Nfd.
Secretary—R. G. KNIGHT, 4 Berrigan Place
Treasurer—H. F. DAWE
Council—S. J. S. WOODS; MRS. DORA RUSSELL; CAPTAIN J. J. STRONG.

TORONTO CENTRE

Honorary President—JOHN F. HEARD, PH.D.
President—R. VERNON RAMSAY, 3 Medici Court, Scarborough *1st Vice-President*—D. J. FITZGERALD
Secretary—C. E. HODGSON, B.COMM., 100 Queen Anne Rd. (18) *2nd Vice-President*—F. L. TROYER
Treasurer—LESTER S. LOCKE *Recorder*—MISS KULLI MILLES
Director of Observational Activities—D. J. FITZGERALD *Director of Adult Education*—F. L. TROYER
Director of Telescope Making—JESSE KETCHUM
"Scope" Editorial Committee—R. V. RAMSAY; D. J. FITZGERALD; A. L. OSTRANDER; R. T. DICKINSON; F. L. TROYER; J. KEMP; MISS K. MILLES; E. FEDORENKO.
Council—R. T. DICKINSON; R. C. ROEDER, PH.D.; A. L. OSTRANDER; W. J. STEPHENSON; H. CREIGHTON; A. KLIMOFF; O. ROGERS; J. KEMP; W. JOHNSON.

VANCOUVER CENTRE

Honorary President—DEAN V. J. OKULITCH
President—W. L. H. SHUTER, PH.D., Physics Department, U.B.C., (8) *Vice-President*—P. H. REYNOLDS, B.S.C.
Secretary-Treasurer—DON GRANT, 33 Glenmore Drive, West Vancouver.
Directors of Telescope and Observers Section—H. N. ROSS and E. PEANNENSCHMIDT
Council—G. BOIRE; MRS. C. C. BAKER; J. O. DELANEY; T. TAYLOR; C. F. SCHWERDTFEGGER, PH.D.; E. M. PRICE; L. D. BRYDLE; P. JOENSEN.

VICTORIA CENTRE

Honorary President—MRS. J. K. PETRIE, PH.D.
President—D. G. STODDART, O.D., 830 Victoria Avenue *2nd Vice-President*—A. H. BATTEN, PH.D.
1st Vice-President—E. E. BRIDGEN
Secretary—W. R. DAMER, B.A., B.ED., 1597 Derby Road *Recorder*—N. B. MANSON
Treasurer—F. R. WILLIAMS *Librarian*—MRS. L. BRIDGEN
Director of Telescopes—G. R. BALL
Council—J. L. JERVIS; L. GERRATH; J. H. MOORE, M.D.; J. C. PARSONS; D. C. WYATT; C. D. SCARFE, PH.D.

WINDSOR CENTRE

Honorary President—JOHN HUSCHILT, PH.D.
President—HENRY LEE, 4271 Riverside Dr. East *Vice-President*—MICHAEL HASTINGS-TREW
Secretary—DANIEL RAHN, 349 Ellis St. West *Recorder*—JAMES M. MEREDITH
Treasurer—CAMERON H. MONTROSE *Librarian*—GLENN CHAPMAN
Council—DANIEL C. BAWTENHEIMER; CYRIL B. HALLAM; GUS A. NYBERG; ARTHUR RAE; MISS STEPHANIE SMITH; ANDREW A. TAYLOR; RUSSELL WARWICK.

WINNIPEG CENTRE

Honorary President—HIS WORSHIP MAYOR S. JUBA
President—MISS S. NIXON, Ste. 31, 105 Roslyn Rd. (13) *1st Vice-President*—B. ROTOFF
Secretary-Treasurer—R. C. DONER, 13 Arundel Rd. (6) *2nd Vice-President*—T. D. CAIRNS
Recorder—J. MOHLER
Council—B. F. SHINN, L.R.A.M., L.L.C.M.; J. N. R. SCATLIFF, M.D.; W. W. W. WRIGHT; R. ELLIS; H. BURGOYNE; P. ABEL; A. FALK.

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 student standing first in first class honours in the graduating year of the Astronomy Division of the Mathematics and Physics course at the University of Toronto. Awards have been made to the following:

1906 — W. E. Harper	1929 — P. M. Millman	1956 — D. C. Morton
1907 — R. M. Motherwell	1931 — W. S. Armstrong	1960 — C. R. Purton
1909 — R. K. Young	1933 — K. O. Wright	1961 — R. C. Henry
1910 — R. J. McDiarmid	1935 — Miss F. S. Patterson	1962 — J. R. Percy
1911 — R. S. Sheppard	1937 — D. A. MacRae	1963 — P. H. Reynolds
1913 — E. A. Hodgson	1940 — W. F. M. Buscombe	1965 — A. F. J. Moffat
1914 — G. S. Campbell	1948 — R. W. Tanner	1966 — W. A. Sherwood
1926 — F. S. Hogg	1949 — I. Halliday	

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 which he has carried out in astronomy and closely allied fields of original investigation. Awards have been made to the following:

1940 — Bertram J. Topham (Toronto)	1950 — F. Keith Dalton (Toronto)
1941 — H. Boyd Brydon (Victoria)	1951 — DeLisle Garneau (Centre Français de Montréal)
1942 — W. G. Colgrove (London)	
1943 — Cyril G. Wates (Edmonton)	1953 — Jean Naubert (Centre Français de Montréal)
1945 — Paul-H. Nadeau (Quebec)	
1948 — Isabel K. Williamson (Montreal)	1955 — Frank J. DeKinder (Montreal)
1949 — Frank Sisman (Hamilton)	1956 — Maurice Drolet (Quebec)
	1959 — Earl Milton (Edmonton)

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. Recipients to date are:

1959 — E. J. A. Kennedy (<i>National Secretary</i>)	1964 — C. S. Beals (Ottawa)
J. H. Horning (<i>National Treasurer</i>)	M. W. Burke-Gaffney, S.J. (Halifax)
1960 — Charles M. Good (Montreal)	W. T. Goddard (Hamilton)
Miss F. Laforest (Centre de Montréal)	1965 — D. C. Bawtenheimer (Windsor)
Frederic L. Troyer (Toronto)	John F. Heard (Toronto)
1961 — *Robert Peters (Victoria)	A. M. Crooker (Vancouver)
1962 — Jean Asselin (Centre de Montréal)	Ernest S. Keeping (Edmonton)
Robert J. Clark (Vancouver)	W. S. Mallory (Hamilton)
Jesse Ketchum (Toronto)	1966 — P. Lemieux (Centre de Montréal)
Joseph A. Pearce (Victoria)	S. Litchinsky (Calgary)
1963 — Edwin E. Bridgen (Montreal)	W. J. McCallion (Hamilton)
Miss M. S. Burland (Ottawa)	W. A. Warren (Montreal)
A. Vibert Douglas (Kingston)	

* Deceased

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

NATIONAL OFFICERS AND COUNCIL FOR 1966

Honorary President—W. E. VAN STEENBURGH, O.B.E., PH.D., LL.D.

President—MALCOLM M. THOMSON, M.SC., Ottawa

First Vice-President—J. E. KENNEDY, M.SC., Saskatoon

Second Vice-President—HENRI SIMARD, Montreal

National Secretary—NORMAN GREEN, B.A., L.TH., 252 College Street, Toronto 2-B

National Treasurer—RAYMOND R. BROADFOOT, 252 College Street, Toronto 2-B

Recorder—LESLIE V. POWIS, Hamilton

Librarian—JOHN R. PERCY, M.A., Toronto

Editor—Miss RUTH J. NORTHCOTT

Council—

Elective Members: G. R. MACEE, PH.D., London; G. J. ODGERS, PH.D., Victoria;
BRYAN RAWLINGS, B.SC., Montreal

Past Presidents: RUTH J. NORTHCOTT, M.A., Toronto; K. O. WRIGHT, PH.D., Victoria

Representatives from Centres:

Calgary Centre: J. F. WRIGHT, S. WIESER (President)

Edmonton Centre: D. A. RODGER, W. J. P. CABLE (President)

Halifax Centre: JOHN HAULT, ALAN WHITMAN (President)

Hamilton Centre: W. A. FAUTLEY, JAMES WINGER (President)

Kingston Centre: W. R. PEIKERT, PETER A. FOULGER (President)

London Centre: W. WEHLAU, GRAYDON SYMONDS (President)

Montreal Centre: C. PAPACOSMAS, C. M. GOOD (President)

Centre français de Montréal: P. LEMIEUX, P. MAILLOUX (President)

Niagara Falls Centre: J. HAUZER, H. N. A. MACLEAN (President)

Ottawa Centre: IAN HALLIDAY, E. H. DUDGEON (President)

Quebec Centre: L. G. GAGNON, P. MARMET (President)

St. John's Centre: J. J. STRONG, S. J. S. WOODS (President)

Toronto Centre: F. L. TROYER, R. V. RAMSAY (President)

Vancouver Centre: V. J. OKULITCH, C. F. SCHWERDTFEGER (President)

Victoria Centre: J. L. CLIMENHAGA, E. K. LEE (President)

Windsor Centre: CAMERON MONTROSE, HENRY LEE (President)

Winnipeg Centre: R. J. LOCKHART, B. F. SHINN (President)

(The 1967 officers of the Centres are printed in the *Supplement*, p. 18)

HONORARY MEMBERS OF

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Dr. V. A. Ambartsumian (U.S.S.R.)	Dr. Martin Schwarzschild (U.S.A.)
Dr. Bart J. Bok (Australia)	Dr. Harlow Shapley (U.S.A.)
Dr. I. S. Bowen (U.S.A.)	Dr. Iosif S. Shklovsky (U.S.S.R.)
Dr. Gerald M. Clemence (U.S.A.)	Professor Joel Stebbins (U.S.A.)
Professor E. Hertzsprung (Denmark)	Dr. A. Unsold (Germany)
Dr. A. H. Joy (U.S.A.)	Dr. G. Van Biesbroeck (U.S.A.)
Dr. J. H. Oort (Netherlands)	Dr. R. v. d. R. Woolley (England)
Professor H. H. Plaskett (England)	

