

Supplement to the **JOURNAL**  
of the **ROYAL ASTRONOMICAL**  
**SOCIETY** of **CANADA**



**ANNUAL REPORT**  
**1971**

**APRIL 1972**



## REPORT OF THE NATIONAL SECRETARY

Space exploration took a leap forward when Mariner 9 arrived in the neighbourhood of Mars and went into orbit in November. Its TV cameras reported a gigantic dust storm that obscured most of the surface of the Red Planet. Subsequent reports threw new light on the surface details on our neighbour.

During 1971 well-attended meetings of the Council were held on January 23, May 21, May 22 and October 16. The Annual Meeting was held in Hamilton in conjunction with the General Assembly of the Society.

The total number of members of the Society for 1971 was 2,554 including 139 Life members. The membership as of September 30th was as listed below:

Calgary	58	Ottawa	174
Edmonton	58	Quebec	87
Halifax	29	St. John's	16
Hamilton	87	Saskatoon	48
Kingston	9	Toronto	784
London	46	Vancouver	143
Montreal	164	Victoria	72
Centre d'Astronomie	70	Windsor	33
Niagara Falls	45	Winnipeg	103
Unattached			
Canada	138	Foreign	18
United States	357	Honorary	15

The General Assembly for 1971 was one of the best planned and smoothly executed meetings of the Society as well as being well attended. A full account of the Assembly was detailed in the June issue of the JOURNAL.

The 10th Canada-Wide Science Fair was held this year in Edmonton. The Society's award was won by Michael Spicer for placing first in the Astronomy Section of this popular Fair.

Under the direction of Dr. Ian Halliday as Chairman of the Editing Committee and Editor, the JOURNAL maintained its interest for amateurs and professionals alike. As a popular section of the JOURNAL, the National Newsletter noted the opening of North Mountain Observatory, a project of the Ottawa Centre. The OBSERVER'S HANDBOOK, edited by John R. Percy, continued its 63rd year of publication.

Many members of the Society have been honoured as recipients of awards during the past year. The Gold Medal was won by Blake Francis Kinahan who attained an A standing and a percent of 93 in Astronomy at the University of Toronto in his graduating year. Service Awards were presented to Kenneth Burne Meiklejohn of the Calgary Centre and John N.R. Scatliff, M.D., of the Winnipeg Centre. Membership Certificates were approved for presentation to members of the Ottawa, Montreal, Victoria and Toronto Centres.

Canadian Science received its highest international recognition with the announcement on November 2nd that the Nobel Prize in Chemistry had been awarded to Dr. Gerhard Herzberg of the National Research Council and a member of the Ottawa Centre. Mention, too, should be made of the award of the Rumford Premium, the highest honour of the American Academy of Arts and Sciences to a team of Canadian radio astronomers for their achievements in the field of long-baseline interferometry.

The Society was saddened in January at the passing of Victor Ben Meen, Chief Mineralogist of the Royal Ontario Museum. He was perhaps best known for his discovery and exploration of the Chubb Crater in Ungava and his contribution to the erection and establishment of the McLaughlin Planetarium as a part of the R.O.M.

It is with regret that we record also the deaths during 1971 of Mr. William Fautley of the Hamilton Centre, Mr. Dean Thompson of the Toronto Centre and Mrs. Williamson of the Montreal Centre.

C.E. Hodgson, *Secretary*

## *Annual Meeting*

### CALGARY CENTRE

The Centre held nine regular meetings and ten council meetings during the past year. All meetings were held at the Calgary Centennial Planetarium with the exception of the Annual Dinner. Speakers and subjects were:

- January 21 – John Howell: “Lunar Occultations and Observations”.
- February 18 – Junior Forum and Paul Costello: Film.
- March 18 – Roger Weir: “Myths and Legends in Astronomy”.
- April 15 – Discussion of Constitution.
- May 20 – Gary Finlay: “Energetic Realities of Space Travel”.
- September 16 – Alfred A. Levinson, Ph.D.: “Moon Rock, Minerals” and Film.
- October 21 – Richard Hartland-Rowe, Ph.D.: “Lunar Rhythms” and Film.
- November 18 – P.E. Gretener, Ph.D.: “How Unique is Mars” and Film.
- December 11/71 – Annual Dinner. S. Wieser: “Astrology”.

### EDMONTON CENTRE

This year our Centre again held regular monthly meetings at the University of Alberta Campus.

We started on October 19 with the Annual Meeting, at which time the new Executive and Council were elected. This was followed by the Annual Banquet at the Faculty Club of the University on Nov. 9. At this occasion the following awards were presented:

- The McBain Trophy for Astrophotography to Brian Martin.
- The President’s Award for Observational Activities to Bob Blaxley.

The programs and speakers of the eight regular meetings were:

- October – R.A. Nelson, Calgary Planetarium: “Safari to the Mexican Eclipse”.
- November – G.W. Hodgson, Ph.D. Calgary: “The Origin of Life in Outer Space”.
- December – Films: “Time-lapse photography of the planets”; “Construction of the Isaac Newton Telescope”. Video-tape of the moon, made by Mr. Gary Finlay.
- January – Wm. Cable: Demonstration of the Planetarium Projector (held at the Queen Elizabeth Planetarium).
- February – Alan Blackwell, National Research Council: “Meteorite Observation and Recovery”.
- March 8 – Allan Clark, Ph.D., University of Calgary: “Infra-red Astronomy”.
- March 23 – K.O. Wright, Ph.D., Dominion Astrophysical Observatory: “The Evolution of Double Stars”.
- May – E.S. Keeping, B.Sc., A.R.C.S.(Lond.), D.I.C.: “Voyage to the Galapagos Islands”. Film: “The Radio Sky”.

Two outdoor events for members were organized: A picnic and observing session in June, and an “Observing Extravaganza” in September. Both were held at the U. of A. Devon Observatory Site.

The Observer’s Group continued to meet regularly to exchange ideas, which they found very valuable.

A number of new telescopes were completed during the year, and soon put to use.

The Observing highlights had to be the two very successful grazing occultation expeditions, one a joint effort with the Calgary Centre. These successes have generated increased interest in these important events, so we expect more grazing expeditions in the future.

(Mrs.) Jenny Rusch, *Secretary*

### HAMILTON CENTRE

The Hamilton centre was very active this year and a great many things were accomplished. The Council of the Centre held six meetings and there were the usual monthly meetings at McMaster University as follows:

- January – Annual meeting and election of Officers and Council. – Guest speaker was Mr. L. Russell and “A Photographic tour through McMaster”.
- February – Mr. W. Daugherty talking on the Aluminizing of reflecting mirrors.

## *Annual Meeting*

- March** – D.E. Balik, Ph.D.: “Use and construction of Lasers”. This was a most interesting discussion because Dr. Balik was one of the two men involved in the invention of the Laser at Bell Labs.
- April** – Display of commercial telescopes by Mr. L. Stuart; – G. Thede: “The First Canadians on the Moon” and “Astrophotography II”.
- May** – Young Astronomers Night, where our younger members produced the program based on the moon and the exploration by manned landings.
- October** – F. Schneider: “Photographic Applications with Colorful Results”.
- November** – J. Winger and G. Craig: “Atmospheric Disturbances and their Effect on Astronomy”.
- December** – G. Thede explained his new photoelectric device for the detection of Shadow-bands.

All the monthly meetings had a new department called “Science Update” given by G. Thede. This involves a short lecture of 15–20 minutes detailing new discoveries in astronomy and related sciences.

The Annual meeting was also noted for the first distribution of Hamilton Centre Membership Awards to those who have been members for a lengthy time and have contributed to the betterment of astronomy.

The Centre was greatly saddened this past spring with the death of its long time member and companion Mr. William Fautley. His help and wise counsel is greatly missed and all who endeavored to make telescopes were struck a severe blow. Due to the great esteem held by the Centre of Mr. Fautley, Council passed a resolution to establish the “William A. Fautley Award” to be given annually to that person who made the greatest contribution to the Centre during the past year and shall be selected by a committee appointed by Council annually. Thus the memory of Mr. Fautley will live for a long time. The Award will be a trophy to be held by the recipient for one year and he shall also receive a miniature to keep.

The Centre had the honour to host the General Assembly this year and so decided to co-host it with the Niagara Falls Centre. Through much diligent work and planning the Assembly was a great success, including the usual one day of rain, albeit the last day. The idea of co-hosting the Assembly was ideal for the out-of-towners because they not only saw the Hamilton area but also that of Niagara Falls. We would strongly recommend to other larger centres to do the same.

The greatest triumph to the Centre this year was its incorporation under the laws of the Province of Ontario. The legal name of the Centre now is “The Royal Astronomical Society of Canada 1968, Hamilton Centre” and it is run by a Board of Directors instead of a Council. The founding members of the Corporation were as follows: L.V. Powis, R. Lang, R. Speck, E.A. Colquhoun and P.H. Ashenhurst.

Peter H. Ashenhurst, *Secretary*

## KINGSTON CENTRE

Eight meetings during the 1970-71 season, the dates and subjects were as follows:

- October 5, 1970** – Two films were shown, and the Queen’s University planetarium and optical telescope were demonstrated.
- October 19** – Film: “The Radio Sky”.
- November 2** – The Bell Telephone film: “The Strange Case of the Cosmic Rays”.
- November 16** – The guest speaker, Mr. Kenneth Chilton, discussed planetary observations.
- January 18, 1971** – A film on radio astronomy was shown.
- February 1** – The Bell Telephone film: “Time”.
- February 15** – R.N. Henriksen, Ph.D., Queen’s University Astronomy Group: “Pulsars—Present and Future”.
- March 8** – Film: “The Parkes Radio Telescope”.

In addition to this, the Kingston centre has organized a mirror grinding project under the direction of Bob Baran, of the Queen’s Astronomy Group, and Glen Chapman. The group hopes to continue work next year, with the aid of a grinding machine recently purchased.

Kenneth C. Heaton, *President*

## LONDON CENTRE

Our forty-ninth year as a R.A.S.C. Centre, 1971, has left the London Centre looking forward to 1972 as a "golden" year in more ways than one. Although several 1971 meetings had very disappointing attendance, the ratio of active people to apathetic ones has grown, and our fall meetings enjoyed increasing attendances. Our programs were as follows:

- January 28 – W.C. Heine, Editor, London Free Press: "The U.S. Space Program".  
February 18 – J.D. Landstreet, Ph.D., University of Western Ontario: "White Dwarfs".  
March 18 – The H.R. Kingston Memorial Lecture. Arthur R. Upgren, Ph.D., Wesleyan University, Connecticut: "Astronomy—A Renovated Field".  
March 20 – Visit to Ontario Science Centre and McLaughlin Planetarium in Toronto.  
April 22 – Jean René Roy, University of Western Ontario: "A Nearby Case of Cosmic Fever; Some Considerations on the Phenomenon of Solar Activity".  
May 20 – H.N. Plotkin, Professor of History of Astronomy, U.W.O.: "Galileo and the Church".  
June 17 – Member's Night; Martin Connors: "The Surveyor Project"; Peter Andreae, Head of Telescope Making, led a discussion on techniques of telescope making.  
October 1 – "Star Night" featuring observing and a talk by Ken Hewitt-White of the Ottawa Centre on the Ottawa Observers Group.  
October 28 – W.P. Bidelman, Ph.D., Warner and Swasey Observatory: "Spectroscopy – Key to the Stars".  
November 25 – René Racine, Ph.D., David Dunlap Observatory, Toronto: "The University of Toronto's New Observatory in Chile".

Our newsletter published a total of 130 pages of interesting and informative reading, and apparently is being enjoyed greatly by the membership. Several serialized articles were carried during the year. Gestetner duplicating has improved readability greatly.

The Observers Group had several excellent activities planned, but were clouded out for the following; January 3 Quadrantid Meteors, February 9-10 Lunar Eclipse, April 23 Lyrid Meteors, and the Grazing Occultations of July 17 and December 28. Success was had for the December Geminid Meteors, a November Pleiades Passage, and the May 15-16 Mars Occultation. It seems as if variable stars are going to be our specialty, if 1971 is an indicator. Several of our members took part in AAVSO and RASC programs. Some solar and deep sky work was also done in the Centre.

Although plans for a Centre observatory were scrapped, the telescope makers group was active and several telescopes were completed and plans for larger ones drawn up.

1972 can hardly help but be a success for our Centre if we get better attendance at our meetings and also if we don't have so many conflicts with the weather man!

Martin G. Connors, *Secretary*

## MONTREAL CENTRE

In its fifty-third year of existence, the Montreal Centre continued its regular program of public monthly meetings. During the past season, eight such meetings were held, one at the Dow Planetarium, and the others at McGill University.

The Annual General Meeting of the Montreal Centre, required by its constitution and by-laws as a Quebec corporation, took place on Thursday, October 22, 1970. At this meeting the annual reports of the officers were presented and accepted, and the slate of officers for the new fiscal year was duly elected. Upon termination of the regular business of the Montreal Centre, there followed a slide show depicting the Centre's expedition to the solar eclipse of March 7, 1970. A social hour followed the meeting.

On November 12 our speaker was Mr. Edward Lindberg of Rochester, N.Y., who gave us an insight into the origins of Stellafane.

The third meeting of the season was held on December 10, at which Dr. Dorrit Hoffleit spoke on "Speed Demons Among the Stars".

The first meeting of 1971 was held on January 14 at the Dow Planetarium for a special demonstration of the Zeiss projection equipment.

On February 11 the film "Exploring the Milky Way" was shown. Another three films,

## *Annual Meeting*

"Seeds of Discovery", "The Universe from Palomar", and "The Isaac Newton Telescope", provided the evening's entertainment at the meeting of March 11.

The meeting of April 8 was the occasion of the H.G. Townsend Memorial Lecture. The distinguished speaker this year was Dr. Robert H. Dicke of Princeton University. Dr. Dicke, a member of the National Science Board of the United States, spoke about his views on cosmology. A very large and appreciative audience was present for this event.

The final meeting of the season was held on May 13, when Dr. T.F. Morris, a past President of the Montreal Centre, described "The Foot-Loose Astronomer and the Wandering Meridian". The customary social hour followed the meeting.

Howard Simkover, *Secretary*

### *Report of the Director of Observational Activities*

The long winter and the abnormal amount of snow have had a significant influence on the activities before April 1971. Even those living within walking distance of the Observatory have had their problems in reaching the building on occasion, and at many meetings during the winter the attendance was lower than normal, including for the Christmas Party. Another event that suffered was the lunar eclipse of February 9, 1971, which had a reasonably good sky, but came right after a sizeable snowfall.

The Meteor Section had its November shower observation cancelled because of bad weather, and did not attempt any more expeditions or events at the Observatory until early May, but this event was, again, called off. A successful trip to Ste. Marguerite for the Delta-Aquarids was made at the end of July, under the direction of the (since then) appointed new chairman of the section, Stephen Smolar.

Planetary observations were again made of Jupiter, Mars and Saturn, but a detailed report will have to wait until all observations are in.

The Lunar section has initiated a new program of combined visual and photographic observations.

The Solar section had most of the regulars observing as usual; the number fluctuates slightly, but never much.

The Radio and Electronics Section is working hard, has just obtained a 12-foot parabolic reflector, with a possibility of one or more 10-footers to come. There are no specific results to report on; the work, at present, is in the direction of making the equipment smaller and more transportable, so that we can take it along to the Maritimes for next year's solar eclipse.

The Occultation section unfortunately lost its chairman of long standing early in the summer, due to illness. Mr. Good is well on the road to recovery, fortunately, but will not be able to resume the chairmanship of the section.

The Photography section has been very active, and some good slides as well as negatives have been obtained, with a promise of more, in spite of some problems with the Observatory's 6-inch refractor, mainly the drive. Here the Electronics section is also active to design a better drive mechanism.

Other events: There were, technically, two Star Nights in the fiscal year; the first one occurred just before the previous Annual meeting and has been mentioned there briefly. It was a success, although the sky was very hazy. The second one was held on September 24, 1971, and had excellent weather, but poor publicity, and the turnout was low.

The Montreal Centre, on request, organised a Star Night at Bishop Whelan High School in Lachine, on the occasion of their Science Day in May, which was well attended and appreciated, but had poor sky as its only problem.

A series of six "Evenings with the Stars", organised in cooperation with and on request of the Recreation Department of the City of Côté Saint Luc, started out very well, but did not keep this promise later; attendance gradually dwindled to zero. On the last evening we could not even obtain access to the location. Probable reasons: publicity, or rather the lack of same, except before the first evening; poor weather for the 3rd, 4th and 5th evenings may also have played a role, but the 6th had near-perfect weather and could have been a success.

W. Jutting, *Director*

*Report of the Director of the Observatory*

From October 1, 1970 to September 30, 1971, we collected 1,861 signatures in the Observatory Attendance Book. The Observatory was officially opened 267 times, or more than three times every four days. (As well, we survived two attempted break-ins). An average of only seven signatures each time the building was open no doubt seems low to those who only attend an occasional meeting, but most of the key-carrying members regularly dropped in to work on various projects alone, or in groups of two or three.

One project I observed from afar (Valleyfield, where I am boarding), were the meetings in Côté St. Luc. Aside from the loan of equipment, you may ask, "What does this have to do with the Observatory?" It seems that our Observatory is slowly sliding downhill, and Côté St. Luc was a possible refuge in event of disaster. While there is no cause for panic yet we should consider what we could do if the building suddenly became unsafe. A few more exceptionally wet, muddy springs could be our downfall; or the drainage system in the playing-field that stopped the spring floods could stave off disaster for another twenty years. Nevertheless, we will eventually be forced to take action.

There has been some talk of moving to the country for better seeing conditions. While observing is one of the functions performed at the Observatory, I believe that it is more important as a place to meet, work, and store records and equipment. It is pleasant to discuss the luxury of a large, remote observatory, but transportation problems would limit its usefulness. If we are to avoid possible disaster, we must consider moving and/or heavy construction work in the not-too-distant future.

I have given what I hope is an early warning, to give us time to prepare. Some future Board of Directors will be forced to make a decision. The more people we have working on the problem, starting now, the more likely we are to find a satisfactory solution.

Boyd Ramsay, *Director*

## NIAGARA FALLS CENTRE

The year 1971 was an exciting year for the Niagara Falls Centre since we were co-hosts with the Hamilton Centre for the 1971 General Assembly. Much of the latter part of 1970 and the early part of 1971 were devoted to work in preparing for this event and a number of our members contributed many hours of effort toward what we thought was a successful General Assembly. We greatly appreciated Hamilton Centre's inviting us to co-host this event with them.

Our regular meetings were again held in the Drummond Hill Library in Niagara Falls. Eight regular meetings were held in addition to our usual program of star nights. We have also had a group become quite active in making field trips for observations such as occultations.

As in past years, the Centre has continued its programs in education. One class in telescope making was conducted and a few of our members continued their program of presenting talks before various local groups.

Our programs and speakers for the year were as follows:

January 14 – Annual election of officers. Films on Apollo trips to the Moon.

February 11 – R. Doran: "Radio Astronomy".

March 11 – Al Kindy: "The Use of the Planetary Tables in the Handbook"; Mark Smith: Film of February 10 Total Lunar Eclipse.

April 8 – R. Lang, Hamilton Centre: "The Sky at Night".

May 13 – Review of Final Plans for the General Assembly.

October 14 – R. Doran and H. Maclean: "Highlights of the 1971 General Assembly".

November 11 – Edward Lindberg: Slide Show and Talk on His Recent Trip to Europe.

December 9 – Members Night. H. Maclean: Slides on Various Astronomical Objects.

Robert C. Doran, *Secretary*



## Annual Meeting

### OTTAWA CENTRE

The past year marks a truly outstanding event in the history of the Ottawa Centre – one that is the culmination of efforts of a small group who had the foresight to dream and the courage and determination to fulfill this dream. Backed by generous financial contributions of Ottawa Centre members and friends, and built through a great gift of time and skill by a dedicated few, the North Mountain Observatory was officially opened on October 22 and 23.

More mundane, but none-the-less an important activity, the following lecture meetings were enjoyed by Centre members and friends:

**January 14, 1971** – Annual Dinner Meeting. Helen Sawyer Hogg, Ph.D., Professor of Astronomy, University of Toronto: “Eighteenth Century Expedition for the Transits of Venus”.

**February 16** – Bryan N. Andrew, Ph.D., Radio Astronomy Section, N.R.C.: “Variable Radio Sources; the Ups and Downs of Astronomy”.

**March 15** – V. Gaizauskas, Ph.D., Radio Astronomy Section, N.R.C.: “The Ottawa River Solar Observatory”.

**April 2** – The Observers Group presented a resume of their activities for the year – featuring a slide and tape show. The 16” telescope, nearly completed, was on display.

**September 28** – Ian Halliday, Ph.D., Astrophysics Branch, N.R.C.: “The Meteorite Recovery Programme in Western Canada”.

**October 22** – Opening Ceremony and Commemorative Lecture – North Mountain Observatory. Walter Scott Houston: “Amateur Methods of Solar Observing”.

**October 23** – Official Opening – North Mountain Observatory; Walter Scott Houston. Open House – October 23 and 24.

**November 30** – V.A. Hughes, Ph.D., Physics and Astronomy Department, Queen’s University: “Galactic Big Bangs”.

Observers Group meetings continue on the first Friday of each month and attendance is steadily increasing. Interest is maintained by the joint efforts of the Chairman and coordinators of the observing committees, and by an effort to educate and encourage some of the newer and younger members.

The above activities: Centre lecture meetings, Observers Group meetings, expanded Observational Programs, “Astronotes”, and a not always subtle effort to “spread the word” are attracting new members and our numbers are increasing.

Looking back at this time we can say that 1971 has been a great year. With accumulated resources including the 16” telescope, increased interest in observing programmes, and our greatest asset, members, we look forward to the future.

Mary W. Grey, *Secretary*

### ST. JOHN’S CENTRE

**November 9, 1970** – Regular monthly meeting with discussion on the 1972 solar eclipse.

**December 7** – Planetarium show “The Star of Bethlehem” given by Dora Russell.

**February 8, 1971** – Festival of Movies, open to the public.

**March 4** – Open House to coincide with the Open House of the College of Fisheries.

**April 19** – Lecture: “Fossil Magnetism in Meteorites . . . a Clue to the Origin of the Planets”, delivered by Dr. Hodych.

**May 17** – Slide show given by vice-president Randy Dodge, entitled “A Visit to the Moon”.

**June 14** – Report on the feasibility of setting up a newsletter by the vice-president. Films.

**June 28** – Report on proceedings at the General Assembly given by Dora Russell. Observation site chosen for the summer.

**August 10** – Special meeting to welcome Ken Chilton from the Hamilton Centre. Mr. Chilton presented the Ruth Northcott 3-inch refractor on loan from the National Office. He followed with a talk illustrated with slides, “The Scientific End of Astronomy – Observing”.

**September 27** – Plans for a telescope-making program were laid on. After general business, a visit was made to the planetarium.

**October 18** – Annual Meeting. Recording of Wells and Welles “War of the World” panic of 1938.

R. Nugent, *Secretary*

## SASKATOON CENTRE

General Meetings of the Centre were held each month throughout 1971, with the majority of speakers drawn from the members of the Centre. In September, instead of a general meeting, an outing for an evening of observation was held at the farm of Mr. and Mrs. Auckland, near Pike Lake. This contact had been made through Mrs. Auckland's reports at an earlier time on the Comet Bennett.

The Executive of the Centre met monthly to plan the programs for the General Meetings, to discuss the operation of the Observatory, and to approve routine matters of business. Minutes of General and Executive meetings have been published in the Centre's Newsletter; the majority of members subscribe to this and it is exchanged with other Centres of the Society.

Special events undertaken by the Centre were the opening of the Observatory for the Lunar Eclipse in February and the Opposition of Mars in August. Four lectures were given by members of the Centre during the month of July for the benefit of teachers attending the Summer Session at the University of Saskatchewan.

A substantial increase in membership, as shown by the report of the National Secretary, has taken place during the year; this was reflected in the greater attendance at the Centre Workshops held each Monday evening in the Observatory. Mr. W. Frenzel opened the Observatory on Sunday afternoons for a period of ten weeks in the latter part of the summer; more than 1000 individuals took advantage of this arrangement to view the exhibits and instruments.

J.E. Kennedy, *Secretary*

## TORONTO CENTRE

In 1971, the Centre had 784 members. Its affairs were administered by the Council: J.R. Percy, E.R. Seaquist, C.G. Clark, C.E. Hodgson, J. Bode, A.W. Scott, H. Creighton, R. Berry, K. Bragg, R. Bredberg, G. Foster, E. Comars, J. Low, K. Pilon, R. Racine, P. Tattersall and I. McGregor. Douglas Gies served as Chairman of the Observational Activities Committee and Robin MacFarlane served as Property Custodian. D.J. FitzGerald and R.V. Ramsay were Past Presidents and Dr. Helen S. Hogg was our Honorary President.

The largest undertaking of the Centre was the production and mailing of *'Scope*, the newsletter of the Toronto Centre. The editorial committee of *'Scope* has done a particularly fine job in 1971. Not only did they publish more and better material than in any previous year, but they also did so (despite increased costs of mailing and production) at less expense than in 1970. We extend our congratulations and thanks to the Editor, Ken Pilon, and to Jim Cobban and Harlan Creighton, his assistants, and to all those who assisted with the writing and distribution.

Among the functions of *'Scope* is to publicize the various meetings of the Toronto Centre. In 1971, the following program of meetings was capably arranged and organized by Dr. Ernie Seaquist, the Chairman of the Program Committee.

January 8 – Miss Judith Merril: "Science Fiction".

January 22 – Philip Gregory, Ph.D.: "Satellite Radio Astronomy".

January 29 – Annual Meeting and Members' Night.

February 19 – Dennis Marks, Ph.D.: "The Structure and Evolution of the Sun".

March 5 – Members' Night.

March 19 – Meeting at York University and tour of the Petrie Science Building. Dr. K. Innanen and Dr. F. Morgan described the scientific activities of the Centre for Research in Experimental Space Science.

April 2 – Members' Night.

April 16 – E.R. Seaquist, Ph.D.: "Quasi-Stellar Radio Sources".

April 30 – Charles Taggart: "Weather Satellites and their Applications".

May 14 – Members' Night.

May 28 – Thomas Bolton, Ph.D.: "The A Stars".

June 24 – Members' Night.

July 22 – Members' Night.

August 21 – Picnic and Members' Star Night.

September 10 – Members' Night.

## *Annual Meeting*

**September 25** – Open House at the David Dunlap Observatory.

**October 8** – Members' Night.

**October 22** – Christine Coumts, Ph.D.: "Period Changes in Variable Stars".

**November 5** – Film: "The Violent Universe".

**November 12** – Special meeting on Astrophotography; given by Messrs. J. Kemp, R. McWatters, R. Brewster, R. Berry, R. Chou, P. Smith and A. Flanceman.

**November 26** – John Percy, Ph.D.: "Stellar Magnetism" (Presidential Address).

**December 10** – Colin Hines, Ph.D.: "The Tale of the Tail of the Earth".

Coffee and cookies were provided after the meetings; the Centre is indebted to Cyril Clark and Maureen FitzGerald for purchasing and preparing these so faithfully during the year.

Public Star Nights were held on four occasions in the parks in and around Metropolitan Toronto. These were organized by a committee consisting of Mr. and Mrs. Peter Tattersall, Ralph Chou, Enid Comars and Robin MacFarlane. Despite poor weather and other factors beyond the control of the committee, several hundred people attended these functions. Another faithful group of members assisted the staff of the David Dunlap Observatory in their work with the public on Saturday evenings. Once again, we pay special tribute to Jim Kemp and to Mr. and Mrs. Jesse Ketchum, who provided thousands of visitors with a view of the universe through their telescopes.

The Study Group and the Optical Workshop held meetings on alternate Saturdays throughout the year. The Study Group provided an informal setting for instruction and discussion in the areas of basic and practical astronomy. It was co-ordinated by Enid Comars, Ian McGregor and Robin MacFarlane. The small and informal nature of the Group makes it possible for the new member to participate actively in learning and discussion. In connection with the Study Group, the Planetarium staff, particularly Harlan Creighton, has generously provided access to and demonstrations in the Star Theatre on several occasions.

The Optical Workshop is recovering from a difficult year, one in which much work fell on few shoulders. Throughout most of the year, the only regular instructors were Arthur Heaford and George Foster. In the autumn, however, they were joined by Richard Berry, Moody Kalbfleisch, D.J. FitzGerald, René Racine, Bill Morrow and Jack Winzer. These people offer to the Centre an impressive depth and variety of talent and experience.

Many members of the Centre have built or purchased telescopes but are unsure of how to use them enjoyably and beneficially. The Observational Activities Committee is prepared to provide advice, assistance and co-ordination in this respect. The Committee consists of Douglas Gies, Jim Kemp, Herb Koller, René Racine, Bruce Renton, Chris Smith and Mike Watson. Each of these people is a co-ordinator for a specific area of observational work in which they are active and knowledgeable.

Two special projects are of interest in connection with observational activities. One is the provision of an observing site, far from interfering lights, for members of the Centre. In the past, members of the Centre have had to rely on their own resources, or on the generosity of property-owners such as Larry Foster, who have made their property available for members' star nights, or of the David Dunlap Observatory, which has also made its grounds available on several occasions. The other special project is an expedition to observe the total eclipse of the sun on July 10, 1972.

I wish to record the gratitude of the Toronto Centre to three organizations which have assisted us during 1971: the National Office of the Royal Astronomical Society of Canada for its willing and cheerful help, the David Dunlap Observatory for its constant interest and frequent assistance, and especially the McLaughlin Planetarium for providing meeting, telescope-making, office and library facilities, a discount in its bookstore, and the support and interest of its staff in countless ways.

Finally, I wish to thank all the members of the Toronto Centre for their support, either as elected or appointed officers, as participants in activity groups, or as interested listeners at our meetings and dedicated readers of *'Scope*.

John R. Percy, *President*

## VANCOUVER CENTRE

The membership for 1971 was 143 made up as follows: Regular members – 71, Student members – 64, Life members – 8.

The Centre continued to be affiliated with the Vancouver Museums and Planetarium Association, and so retained the privilege of using the museum facilities for our activities.

Ten monthly general meetings were held featuring a wide variety of excellent speakers. One of the meetings took the form of the annual banquet, and this was held in the planetarium cafeteria. The speaker for that occasion was Mr. Harry Karl of the Department of the Environment who told us how we could pick good seeing nights for astronomical observations!

As well as the general meetings, alternate weeks saw gatherings of our very active discussion group. Topics at these sessions covered a wide range of astronomical and associated scientific subjects.

Several members of the Centre assisted the MacMillan Planetarium by operating telescopes on public observing nights and by helping with the Telescope Mirror Making classes held at the Museum. Several photographic projects were carried out by members of the observer's group.

Once again the Centre sponsored a summer series of public lectures. These were related to the summer activities with the first, given by David Rodger, being on the topic "Flight to Hadley Rille". Terry Dickinson of Rochester, New York gave his presentation on the planet Mars and it proved so popular that it was held over for four evenings. Thanks to all those members who assisted in making this series a success.

A committee was formed early in 1971 to work out plans for the General Assembly which comes to Vancouver for the first time in May 1972. This committee has worked hard throughout the year and it is hoped that the delegates will have a worth-while and enjoyable Assembly to look forward to.

James E. Wright, *Secretary*

## VICTORIA CENTRE

The regular meetings of the Victoria Centre were held at the University of Victoria through the kindness of the University authorities. A total of seven meetings were held in 1971, and the Council met on several occasions to plan the lectures and to conduct business of the Centre.

The speakers and the topics at the regular meetings were:

January 13, 1971 – K.O. Wright, Ph.D.: "Giant Eclipsing Stars".

February 10 – W.L.H. Shuter, Ph.D.: "Millimetre Radio Astronomy at University of British Columbia".

March 10 – Jason R. Auman, Ph.D.: "Life on Other Worlds".

April 14 – ACTIVITIES NIGHT. Exhibits and Films.

October 13 – E.R.V. Milton, Ph.D.: "The Mystery and Beauty of the Aurora".

November 10 – R.W. Hilditch, Ph.D.: "The T-Tauri Stars".

December 8 – P. Laskarides: "Observations of Beta Cephei Stars".

On April 18th, the members of the Centre were guests at a special program of the Vancouver Planetarium. Forty-one members made the ferry trip to Vancouver and enjoyed the kind hospitality of the Planetarium.

Observing sessions were held on each clear Saturday evening under the direction of our Director of Telescopes, Mr. George Ball, using the 12-inch reflector of the University of Victoria.

The Centre maintained a display booth at the Hobby Show held April 22nd to 25th by the Victoria Lapidary Society. Members of the Centre gave demonstrations of mirror grinding and in general endeavored to encourage an interest in amateur astronomy. For the same purpose a booth was also maintained each Saturday night during July and August at the Dominion Astrophysical Observatory when the Observatory was open to the public.

Membership of this Centre for 1971 consisted of 16 students and 42 regular members, making a total of 58 members, plus 6 local life members.

N.B. Manson, *Secretary*

**MORRIS ALTMAN**

CHARTERED ACCOUNTANT

95 KING STREET EAST

TORONTO 1

CANADA

To the Members of  
The Royal Astronomical Society of Canada 1968.

I have examined the statement of financial position of The Royal Astronomical Society of Canada 1968 as at December 31, 1971 and the statements of revenue and expense and surplus for the year ended on that date. My examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as I considered necessary in the circumstances, except as hereinafter noted.

The receipts of the Society, by their nature, are not susceptible to customary audit procedures. I have therefore accepted the receipts as recorded in the books of the Society, without further verification.

In my opinion, subject to the limitation in the scope of my examination as noted in the preceding paragraph, the accompanying financial statements present fairly the financial position of the Society as at December 31, 1971 and the results of its operations for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

*Morris Altman*

Chartered Accountant.

Toronto, Canada,  
April 10, 1972.

STATEMENT OF FINANCIAL POSITION

AS AT DECEMBER 31, 1971

(With comparative figures for December 31, 1970)

<u>A S S E T S</u>	<u>1971</u>	<u>1970</u>	
<u>Current Assets</u>			<u>Current Liabilities</u>
Cash	\$ 935	\$ 9,938	Accounts payable
Accounts receivable	9,244	5,252	
Grants receivable	1,000	-	
Marketable securities (at cost)	3,019	3,019	<u>Deferred Revenue</u>
Accrued debenture interest	112	112	Memberships in arrears
Prepaid expenses	209	279	Advance on publications
	<u>\$14,519</u>	<u>\$18,600</u>	Unappropriated surplus
<u>Special Funds</u>			
Ruth Northcott Memorial Fund (per statement)	\$ 6,127	\$ 4,544	
	<u>        </u>	<u>        </u>	
<u>Fixed Assets (at cost)</u>			
Land	\$17,000	\$17,000	<u>Ruth Northcott Memorial Fund</u>
Building	17,500	17,500	
Office furniture and equipment	4,297	3,738	
Apartment equipment	1,128	1,128	<u>Surplus (Reserves)</u>
	<u>\$39,925</u>	<u>\$39,366</u>	
<u>Less: Accumulated depreciation</u>	<u>10,524</u>	<u>9,840</u>	
	<u>\$29,401</u>	<u>\$29,526</u>	
<u>Library (nominal value)</u>	\$ 100	\$ 100	
	<u>        </u>	<u>        </u>	
	<u>\$50,147</u>	<u>\$52,770</u>	

APPROVED ON BEHALF OF THE COUNCIL:

Henri Simard  
 \_\_\_\_\_ President

Cyril G. Clark  
 \_\_\_\_\_ Treasurer

STATEMENT OF FINANCIAL POSITION

AS AT DECEMBER 31, 1971

(Comparative figures for December 31, 1970)

	<u>1971</u>	<u>1970</u>
<u>LIABILITIES AND SURPLUS</u>		
<u>Current Liabilities</u>		
Accounts payable and accrued charges	\$ 50	\$ 18
<u>Deferred Revenue</u>		
Membership fees for ensuing year	\$ 5,772	\$ 6,321
Advance subscriptions to Journal and Handbook	9,493	9,063
Unappropriated life membership fees (per statement)	<u>3,477</u>	<u>3,676</u>
	<u>\$18,742</u>	<u>\$19,060</u>
<u>TOTAL LIABILITIES</u>		
	<u>\$18,792</u>	<u>\$19,078</u>
<u>Ruth Northcott Memorial Fund Reserve</u>		
	\$ 6,127	\$ 4,544
<u>Surplus (per statement)</u>		
	25,228	29,148
	<u>—————</u>	<u>—————</u>
	<u>\$50,147</u>	<u>\$52,770</u>

STATEMENT OF GENERAL REVENUE AND EXPENSE

FOR YEAR ENDED DECEMBER 31, 1971

(With comparative figures for year ended December 31, 1970)

	<u>1971</u>	<u>1970</u>
<u>R E V E N U E</u>		
Membership fees		
R.A.S.C. Centres	\$ 8,951	\$ 8,799
Individual members	3,951	3,680
Life membership reserve - annual appropriation	<u>348</u>	<u>341</u>
	<u>\$13,250</u>	<u>\$12,820</u>
Grants and Donations		
Government of Canada - annual grant	\$ 5,000	\$ 5,000
Province of Ontario - annual grant	1,000	1,000
Miscellaneous contributions	<u>510</u>	<u>20</u>
	<u>\$ 6,510</u>	<u>\$ 6,020</u>
Publications		
Journal of the R.A.S.C.	\$ 5,892	\$ 5,036
Observer's Handbook	16,927	15,657
Reprints and publication fees	3,932	4,919
Advertising	1,585	1,765
Foreign exchange premiums	<u>-</u>	<u>665</u>
	<u>\$28,336</u>	<u>\$28,042</u>
Less: Agents' discounts	<u>2,578</u>	<u>2,103</u>
	<u>\$25,758</u>	<u>\$25,939</u>
Miscellaneous Revenue		
Building revenue, less expense (per statement)	(\$ 897)	\$ 553
Interest earned	383	469
Insignia sales	<u>66</u>	<u>72</u>
	<u>(\$ 448)</u>	<u>\$ 1,094</u>
	<u>\$45,070</u>	<u>\$45,873</u>
<u>TOTAL REVENUE</u>		
<u>E X P E N S E</u>		
Publications	\$35,707	\$34,266
Staff salaries	7,644	7,500
Contributions to staff pension fund	468	468
Stationery, printing and supplies	804	769
Postage and shipping (net cost)	1,713	1,741
General and office expenses	898	739
Bank charges and exchange	149	-
Telephone	208	159
Library expense	242	774
Annual life membership grants to R.A.S.C. Centres	420	408
Subsidies to centres of the R.A.S.C.	-	100
General assembly and travelling expenses	420	608
Medals and awards	183	196
Depreciation of office furniture and equipment	<u>134</u>	<u>78</u>
	<u>\$48,990</u>	<u>\$47,806</u>
<u>TOTAL EXPENSE</u>		
<u>EXCESS OF EXPENSE OVER REVENUE</u>	<u>\$ 3,920</u>	<u>\$ 1,933</u>



STATEMENT OF BUILDING REVENUE AND EXPENSE

FOR YEAR ENDED DECEMBER 31, 1971

(With comparative figures for year ended December 31, 1970)

	<u>1971</u>	<u>1970</u>
<u>R E V E N U E</u>		
Rentals for space not occupied by the Society	\$ 3,200	\$ 3,180
<u>E X P E N S E</u>		
Property taxes	\$ 941	\$ 964
Heating	718	577
Light, gas and water	329	250
Maintenance and repairs	1,491	218
Insurance	68	68
Depreciation of building	437	437
Depreciation of equipment	<u>113</u>	<u>113</u>
<u>TOTAL EXPENSE</u>	<u>\$ 4,097</u>	<u>\$ 2,627</u>
<u>EXCESS OF REVENUE OVER EXPENSE (EXPENSE OVER REVENUE)</u>	<u>(\$ 897)</u>	<u>\$ 553</u>

SCHEDULE OF FIXED ASSETS AND ACCUMULATED DEPRECIATION

AS AT DECEMBER 31, 1971

	<u>COST</u>	<u>ACCUMULATED DEPRECIATION</u>		
		<u>Balance Dec. 31/70</u>	<u>Depreciat'n For Year</u>	<u>Balance Dec. 31/71</u>
Land	\$17,000	\$ -	\$ -	\$ -
Building	17,500	6,000	437	6,437
Office furniture and equipment	4,297	3,071	134	3,205
Apartment equipment	<u>1,128</u>	<u>769</u>	<u>113</u>	<u>882</u>
	<u>\$39,925</u>	<u>\$ 9,840</u>	<u>684</u>	<u>\$10,524</u>

STATEMENT OF SURPLUS

FOR YEAR ENDED DECEMBER 31, 1971

(With comparative figures for year ended December 31, 1970)

	<u>1971</u>	<u>1970</u>
Surplus at beginning of the year	\$29,148	\$29,893
<u>Add:</u> Library fund reserve transferred to surplus	<u>-</u>	<u>1,188</u>
	\$29,148	\$31,081
<u>Deduct:</u> Excess of expense over revenue for the year	<u>3,920</u>	<u>1,933</u>
Net surplus at end of the year	<u>\$25,228</u>	<u>\$29,148</u>

STATEMENT OF UNAPPROPRIATED LIFE MEMBERSHIP FEES

Balance at beginning of the year	\$ 3,676	\$ 3,867
<u>Add:</u> Life membership fees received during the year	<u>150</u>	<u>150</u>
	\$ 3,826	\$ 4,017
<u>Deduct:</u> Appropriation to general revenue for the year	<u>348</u>	<u>341</u>
Balance at end of the year	<u>\$ 3,478</u>	<u>\$ 3,676</u>

STATEMENT OF RUTH NORTHCOTT MEMORIAL FUND

Balance at beginning of the year	\$ 4,544	\$ -
<u>Add:</u> Proceeds from Ruth Northcott Estate	1,269	1,852
Public contributions	100	2,553
Interest earned	<u>270</u>	<u>139</u>
	\$ 6,183	\$ 4,544
<u>Deduct:</u> Contribution toward library acquisitions	<u>56</u>	<u>-</u>
Balance at end of the year	<u>\$ 6,127</u>	<u>\$ 4,544</u>

1971 balance consisted of:	Cash	\$ 2,127
	Securities	<u>4,000</u>
		<u>\$ 6,127</u>

*Annual Meeting*

WINDSOR CENTRE

Seven regular meetings were held during the year and two Executive meetings.

The programs were as follows:

- January 19, 1971 – Cyril Hallam, educational talk: “Features of Interest in the Handbook”.  
Panel discussion of the five theories of the formation, development and present state of the Universe by Messrs. Gary Drouin, Brian Dorrepaal, David Toth, Kevin Kolodzy.
- February 16 – Gary Drouin: Current Events; J.M. Meredith: “Gliding”.
- March 16 – Gary Drouin: Current Events; Brian Dorrepaal: “Occultations and the Occultation Tables; David Toth, Paul Puce, Brian Dorrepaal and Gary Drouin: “Telescope Making”.
- April 20 – David Toth: Current Events; Brian Dorrepaal: “The Large 52” Telescope at the University of Michigan, East Lansing”; Bert Huneault: “Ionosphere and Radio Wave Propagation”.
- May 29 – Bus trip of members and guests to East Lansing, Michigan – the Abrams Planetarium and the 52” telescope, its construction and abilities.
- September 21 – Michael Hastings-Trew: Current Events; Brian Dorrepaal: “Stellar Evolution; David Toth, Paul Price and Gary Drouin: “Telescope Making”; Bert Huneault: Reports on activities of astronomical plans for the St. Clair College, Windsor.
- October 19 – Brian Dorrepaal: Current Events; David Toth: “Orbital Mechanics”; Michael Hastings-Trew: “Fee Structure for Annual Membership”.
- November 16 – Kevin Kolodzy: “Quantum Mechanics”; Election of Officers and social hour.

J.M. Meredith, *Recorder*

	Calgary	Edmonton	Halifax	Hamilton	London	Niagara Falls	Quebec	St. John's
Balance from 1970	536.68	424.40	132.99	362.45	309.89	302.00	9.92	108.00
Membership Fees	405.00	370.00	115.00	612.00	252.00	260.00	7.75	97.00
Donations	5.92		4.72		10.00		1.65	
Educational Activities		84.45		23.60	5.00			
Annual Dinner	180.00					185.00	4.80	
General Assembly		482.97		370.26				
Sales of Handbooks, etc.	12.15	1.00		4.50	11.05	5.00	2.50	4.00
Interest and Dividends	95.44	13.42		4.37	25.24		1.20	2.00
Life Member Grants	12.00	4.00	12.00	12.00			0.00	
Miscellaneous	289.00	11.19		187.00	28.00			
<b>TOTAL</b>	<b>\$1,536.19</b>	<b>\$1,391.43</b>	<b>\$264.71</b>	<b>\$1,576.18</b>	<b>\$641.18</b>	<b>\$752.00</b>	<b>7.82</b>	<b>\$213.00</b>

Fees remitted to N.O.	57.00	234.00	69.00	363.00	185.40	213.00	0.00	84.00
Library		38.00			14.39		7.02	12.00
Meetings and Newsletters	54.55	330.38		63.09	112.40	65.00	0.28	25.40
Annual Dinner	213.10	30.00					7.36	
General Assembly								
Equipment and Supplies				100.08			1.31	
Office and Administration	119.62	29.60		51.98	9.96	33.00	0.92	11.90
General Expense	41.00	10.00		125.67	12.66	14.00	0.06	8.90
Handbooks, etc.							2.00	9.00
Educational Activities								
Miscellaneous	307.00	39.44		37.98	11.29			
Balance carried to 1972	743.92	680.01	195.71	834.38	295.08	426.00	0.87	61.70
<b>TOTAL</b>	<b>\$1,536.19</b>	<b>\$1,391.43</b>	<b>\$264.71</b>	<b>\$1,576.18</b>	<b>\$641.18</b>	<b>\$752.00</b>	<b>8.22</b>	<b>\$213.00</b>

TORONTO CENTRE: Securities held

Savings Bonds	\$5,161.60
Guaranty Trust	1,500.00
Hydro Quebec Bonds	3,000.00

TS OF TRS OF CENTRES

on	Niagara Falls	awa	St. John's	Saskatoon	Toronto	Vancouver	Victoria	Windsor	Winnipeg
89	302.00	49.92	108.08	101.17	8,092.92	951.74	2,778.03	201.55	596.14
00	260.00	07.75	97.50	419.00	6,277.65	880.00	455.00	217.50	870.00
00		51.65						5.00	16.00
00				80.00		464.00	13.22	127.20	231.40
	185.00	44.80				108.00			
						65.00			
05	5.70	02.50	4.90	6.00			13.50	28.50	6.00
24		21.20	2.55		438.61	27.54	118.15	7.10	14.14
		00.00				32.00	48.00		
00				8.25	14.00	279.75		8.00	314.55
18	\$752.70	77.82	\$213.03	\$614.42	\$14,823.18	\$2,808.03	\$3,425.90	\$594.85	\$2,048.23
40	213.00	4.00	84.00	249.00	3,431.72	528.00	352.80	175.20	453.00
39		07.02	12.00	16.83					
40	65.00	08.28	25.40	32.44	1,295.04	701.93	40.89	127.20	490.14
		07.36				108.00			
					229.00	60.00			
		1.31				33.75	129.16		21.63
96	33.20	03.92	11.94		112.64	107.00	66.64	44.00	211.25
66	14.80	08.06	8.90	8.25	394.45	10.25		20.15	47.25
		02.00	9.00						
									63.40
29				1.00		298.85			
08	426.60	5.87	61.79	306.90	9,360.33	960.25	2,836.41	228.30	761.56
18	\$752.70	77.82	\$213.03	\$614.42	\$14,823.18	\$2,808.03	\$3,425.90	\$594.85	\$2,048.23

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA 1968  
OFFICERS AND COUNCIL OF THE CENTRES FOR 1972

CALGARY CENTRE

*Honorary President* – T.A. Link, Ph.D.

*President* – S. Wieser, Calgary Centennial Planetarium, Mewata Park, Calgary 1

*Vice-President* – Ed Jobs

*Secretary* – Robert Nelson, 2223 – 7th Ave. N.W. (41)

*Recorder* – Brian Clarke

*Treasurer* – Judith Nickol

*Librarian* – Mike Bandmann

*Editor* – John Howell

*Council* – Hank Langstaff; Sam Litchinsky; Jack Bishop; John Findlay; Brad Harris;  
George Roberts; Alan Clark; Noel Lingford; Ulrich Haasdyk.

EDMONTON CENTRE

*President* – F. Loehde, 11107 – 63 St.

*Vice-President* – D.P. Hube, Ph.D.

*Secretary* – Mrs. Y. Ebbers, R.R. #6 N.

*Librarian* – P. Deans

*Treasurer* – M. Dostal

*Editor* – B. Dowling

*Educational Activities* – R. Haeckel

*Observers' Representative* – R. Blaxley

*Social Convener* – Mrs. H. Rusch

*Past President* – A. Smith

HALIFAX CENTRE

*President* – Walter Zukauskas, c/o Lakeside P.O., Hfx. Cty.

*Treasurer* – Howard J. Freeland, 20-1675 Oxford St., Hfx.

HAMILTON CENTRE

*Honorary President* – H.B. Fox (By Appointment)

*Recorder* – K.E. Chilton

*President* – R. Lang, 832 Roxborough, Ave., Hamilton 31, Ontario. (By Appointment)

*1st Vice-President* – R. Speck

*2nd Vice-President* – W.A. Korber

*Secretary* – P.H. Ashenhurst, C.S.T., F.R.A.S., 135 Mohawk Rd. E. Hamilton 50.

*Treasurer* – E.A. Colquhoun

*Curator* – J.G. Craig, B.Sc.

*Librarian* – Miss L. Young

*Council* – M. Bodnar, N. Green, G.A. Thede, J.A. Winger, L.V. Powis.

KINGSTON CENTRE

*President* – Kenneth Heaton, 28 Nancy St., Leamington, Ontario

*Secretary* – Miss C. Geddes 205C Victoria Hall, Queen's University.

LONDON CENTRE

*President* – Martin Connors, 362 Baseline Rd. W. (63)

*1st Vice-President* – Paul Carpenter

*Secretary* – Eric Clinton, 8 Trillium Cres. (25)

*2nd Vice-President* – Chris. Essex

*Treasurer* – Bob Cornforth

*Council* – Peter Andreae; Gordon Graham; William Helps; Ed. Kipp; Jas. Livingstone;  
Ron Lyons.

MONTREAL CENTRE

*Honorary President* – Dr. Robt. Hardie, Ph.D.

*President* – L.R. Duchow, 5047 Cavendish, Montreal 265

*Vice-President* – S.M. Sundell

*Secretary* – C. Papacosmos, Station 'B', Box 1003

*Treasurer* – Granger Robertson

*Recorder* – W.J. Cullinan

*Librarian* – Nora Hague

*Director of the Observatory* – Boyd Ramsay

*Director of Observational Activities* – W. Jutting

*Past President* – Dr. T. Morris, Ph.D.

*Members of the Board* – D. Alexander, J. Allcock, J. Amsell, H. Berrys, S. Brown, Dr. G.L. Fortier, R. Harding, W. Leggett, L. Nikkinen, H.J. Widdop.

## CENTRE D'ASTRONOMIE DE MONTREAL

New address of "LA SOCIETE D'ASTRONOMIE DE MONTREAL"  
3860, rue Rachel app. 1, Montréal 406  
Tel: 274-1224

*Président* – Jacques Lebrun, 6635 boul. de Bruxelles, Brossard  
*Vice-Président* – Irène Gauthier  
*Secrétaire* – Rolland Noël de Tilly, 6651, 35ème avenue, Montréal 409  
*Trésorier* – Guy Morin, 6035, rue Renoir, Montréal-Nord 462  
*Bibliothécaire* – Mme Jean Chubb  
*Editeur* – M. Marcel Seguin  
*Rapporteur* – M. Roger Gagnon  
*Observatoire* – M. André Aird  
*Conférences* – Mme Huberte Palardy  
*Relations Publiques* – M. Philippe Mailloux  
*Observations* – M. Jean Vallières  
*Optique* – Mess. Henri Simard  
Pierre Beauchamp, 6600–19e. Ave., Montréal 408  
Adélarde Rousseau, 2084, rue Visitation, Montréal 133  
*Magasin* – Mme Lise Beauchamp  
– Marcel Legris  
*Directeurs* – Mess. Denis Colletette.  
– et Henry Cola

## NIAGARA FALLS CENTRE

*President* – Frank Scordino, Box 181, St. Davids, Ontario. *Vice-President* – Tony Ackerman  
*Secretary* – Robert C. Doran, M.B.A., Box 241, Niagara Falls  
*Treasurer* – Al Kindy  
*Council* – Frank Scordino; Tony Ackerman; Robert C. Doran, M.B.A.; Al Kindy; J. Hauzer,  
B.S.; H.N.A. Maclean.

## OTTAWA CENTRE

*Honorary President* – Hoyes Lloyd, M.A.  
*President* – L.A. Higgs, D. Phil., National Research Council (K1A 0R8)  
*1st Vice-President* – H. Klinkenberg, D.T.S. *2nd Vice-President* – T.H. Legg, Ph.D.  
*Secretary* – Mrs. Mary W. Grey, B.Sc. (C.E.), Earth Physics Branch, 3 Observatory Cres.  
(K1A 0E4)  
*Treasurer* – R. Wlochowicz, B.Eng. *Librarian* – S.A. Mott  
*Recorder* – J.T. Tothill, B.Sc.  
*Council* – T.E.D. Bean; E.H. Dudgeon, M.Sc.; A.H.C.P. Gillieson, Ph.D., F.C.I.C.; K.  
Hewitt-White; R.L. Hutchison, M.Sc.; F.R. Park, B.Sc.; K. Perrins; D.W. Sida,  
M.Sc., Ph.D. (Lon.), F.R.A.S.

## CENTRE DE QUEBEC

*Président* – Benoit Drolet, 940, Madeleine de Verchères (6)  
*Vice-Président* – Raymond Roberge *Sécretaire* – Robert Mailhot, 17, Delisle, Levis, P.Q.  
*Trésorier* – Maurice Goupil *Directeur des conférences* – Dr. J.-P. Bernier  
*Directeur des observations* – Andre Roy *Rapporteur* – Mlle Andree Mathieu  
*Bibliothécaire* – Claude Hamel  
*Conseil* – Gaston Lamontagne; Paul Darisse; Jean-Louis Thibault

## ST. JOHN'S CENTRE

*President* – Capt. Alex Provan, 10 Roland Dr., Mt. Pearl, Nfd.  
*Secretary* – James Byrne, P.O. Box 4031, St. John's  
*Representative* – Mrs. D. Russell

## SASKATOON CENTRE

*Honorary President* – B.W. Currie, Ph.D., F.R.S.C.  
*President* – G.N. Patterson, P.O. Box 800, Sub 6 *Vice-President* – Ernie Hedley  
*Secretary* – Prof. J.E. Kennedy, P.O. Box 800, Sub 6 *Treasurer* – Linton Smith  
*Council* – Wendel Frenzel; Dr. Fred Holden; Ralph Gillespie; Ron Waldron; Win Ford

## TORONTO CENTRE

*Honorary President* – Helen Sawyer Hogg, Ph.D., F.R.S.C.

*President* – Harlan Creighton, B.Sc., McLaughlin Planetarium, 100 Queen's Park Cres. (5)

*Secretary* – Dan Ostler, Grad. Res. #2, Apt. 807, 4700 Keele St., Downsview

*Recorder* – Fred Troyer

*1st Vice-President* – Ernest Seaquist, Ph.D.

*Treasurer* – A.W. Scott

*2nd Vice-President* – René Racine, Ph.D.

*Past President* – John R. Percy, Ph.D.

*Council* – Richard Berry; Jas. Cobban; D.J. FitzGerald; George Foster; Douglas Gies; Robin Macfarlane; Ian McGregor; R.V. Ramsay; Peter Tattersall; R.R. Thompson.

## VANCOUVER CENTRE

*Honorary President* – V.J. Okulitch, Ph.D.

*President* – Donald W. Smellie, Ph.D., F.R.A.S., 1666 West Broadway

*Vice-President* – Jas. F. Wright

*Secretary-Treasurer* – Mrs. Patricia Mills, 782 Eyremount Dr., W. Van.

*Director of Telescopes* – David Dodge

*Editor* – Sam Riddell

*Council* – Mrs. D. Choukalos; Miss Joan Hoskinson; Major Paul Sykes; Terry Taylor; Wm. Gosse; John Thompson

## VICTORIA CENTRE

*Honorary President* – K.O. Wright, Ph.D.

*President* – A.H. Batten, Ph.D., Dominion Astrophysical Observatory, R.R. No. 7.

*1st Vice-President* – R.G. Napier, B.Sc.

*Secretary* – N.B. Manson, B.A., 1177 Bewdley Ave. *2nd Vice-President* – C.D. Scarfe, Ph.D.

*Treasurer* – F.R. Williams

*Recorder* – M.A. Shepherd

*Director of Telescopes* – G.R. Ball

*Librarian* – Mrs. C.L. Bridgen

*Council* – J.L. Climenhaga, Ph.D.; J.H. Moore, M.D.; V.L. Stanley-Jones; R. Dundee; J.C. Parsons; F. Younger, M.A.; Mrs. S. Ingram; E.E. Bridgen.

## WINDSOR CENTRE

*Honorary President* – John Huschilt, Ph.D.

*President* – Brian Dorrepaal, 2433 Rossini Blvd. (19)

*Vice-President* – James McTavish

*Secretary* – Daniel Rahn, 349 Ellis St. W. (12)

*Recorder* – David Toth

*Treasurer* – J. McGaffey

*Librarian* – Kevin Kolodzy

*Council* – Henry Lee; M. Richardson; Bert Huneault; Cyril Hallam; Cameron Montrose; Harry Horton; M. Hastings-Trew; Michael Reeve; Paul Price; Jas. Townsend.

## WINNIPEG CENTRE

*Honorary President* – J.D. Herbert

*1st Vice-President* – J.W. Elliott

*President* – J. Newton, 18 Peel Cres. (20)

*2nd Vice-President* – Paul Moffat

*Secretary* – A. Luchik, 21 Durham Bay (6)

*Editor* – B.F. Shinn

*Treasurer* – T.D. Cairns

*Council* – Miss Sheila Nixon, J.H. Burgoyne, J. Mohler, J.N.R. Scatliff, M.D.; P. Moffat, Basil Rotoff, D. Watts.



## 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	1931 – W.S. Armstrong	1961 – R.C. Henry
1907 – R.M. Motherwell	1933 – K.O. Wright	1962 – J.R. Percy
1909 – R.K. Young	1935 – Miss F.S. Patterson	1963 – P.H. Reynolds
1910 – R.J. McDiarmid	1937 – D.A. MacRae	1965 – A.F.I. Moffat
1911 – R.S. Sheppard	1940 – W.F.M. Buscombe	1966 – W.A. Sherwood
1913 – E.A. Hodgson	1948 – R.W. Tanner	1967 – R.H. Chambers
1914 – G.S. Campbell	1949 – I. Halliday	1968 – R. Martin
1926 – F.S. Hogg	1956 – D.C. Morton	1970 – J. Kormendy
1929 – P.M. Millman	1960 – C.R. Purton	1971 – Blake F. Kinahan

## 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. Tropham (Toronto)	1951 – DeLisle Garneau (Centre d'Astronomie de Montréal)
1941 – H. Boyd Drydon (Victoria)	1953 – Jean Naubert (Centre d'Astronomie de Montréal)
1942 – W.G. Colgrove (London)	1955 – Frank J. DeKinder (Montreal)
1943 – Cyril G. Wates (Edmonton)	1956 – Maurice Drolet (Quebec)
1945 – Paul-H. Nadeau (Quebec)	1959 – Earl Milton (Edmonton)
1948 – Isabel K. Williamson (Montreal)	1967 – R.R. Thompson (Toronto)
1949 – Frank Sisman (Hamilton)	
1950 – F. Keith Dalton (Toronto)	

## SERVICE AWARD MEDAL OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

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

1959 – E.J.A. Kennedy (Nat. Secretary) J.H. Horning (National Treasurer)	1966 – P. Lemieux (Montréal) S. Litchinsky (Calgary) W.J. McCallion (Hamilton) W.A. Warren (Montreal)
1960 – Charles M. Good (Montréal) Miss F. Laforest (Montréal) Frederic L. Troyer (Toronto)	1967 – H.S. Hogg (Toronto) P.M. Millman (Ottawa) *R.J. Northcott (Toronto) H. Simard (Montréal) J.F. Wright (Calgary)
1961 – *Robert Peters (Victoria)	1968 – D.R.P. Coats (Calgary and (Winnipeg) George Ball (Victoria) Herbert Fox (Hamilton)
1962 – Jean Asselin (Montréal) Robert J. Clark (Vancouver) Jesse Ketchum (Toronto) Joseph A. Pearce (Victoria)	1970 – Norman Green (Hamilton) J.E. Kennedy (Saskatoon)
1963 – Edwin E. Bridgen (Montreal) Miss M.S. Burland (Ottawa) A. Vibert Douglas (Kingston)	1971 – K.B. Meiklejohn (Calgary) J.N.R. Scatliff (Winnipeg)
1964 – C.S. Beals (Ottawa) M.W. Burke-Gaffney, S.J. (Halifax) W.T. Goddard (Hamilton)	
1965 – D.C. Bawtenheimer (Windsor) John F. Heard (Toronto) A.M. Crooker (Vancouver) Ernest S. Keeping (Edmonton) *W.S. Mallory (Hamilton)	*Deceased

# THE ROYAL ASTRONOMICAL SOCIETY OF CANADA 1968

## NATIONAL OFFICERS AND COUNCIL FOR 1971

*Honorary President*—John F. Heard, Ph.D., F.R.S.C., LL.D.

*President*—Henri Simard, Montreal

*First Vice-President*—J. L. Locke, Ph.D., Ottawa

*Second Vice-President*—Henry C. King, Ph.D., M.Sc., F.R.A.S.

*Secretary*—C. E. Hodgson, 252 College Street, Toronto 130

*Treasurer*—Cyril G. Clark, 252 College Street, Toronto 130

*Recorder*—Leslie V. Powis, Hamilton

*Librarian*—R. Peter Broughton, B.Sc., Toronto

*Editor of JOURNAL*—Ian Halliday, Ph.D., Ottawa

*Editor of OBSERVER'S HANDBOOK*—John R. Percy, Ph.D., Toronto

*Executive Secretary*—Mrs. Marie Fidler

### *Council*—

Past Presidents—M. M. Thomson, M.Sc., Ottawa; J. E. Kennedy, M.Sc.,  
Saskatoon

### Representatives from Centres—

Calgary Centre: S. Litchinsky

Edmonton Centre: E. S. Keeping, B.Sc.

Halifax Centre: John Shaw

Hamilton Centre: K. Chilton

Kingston Centre: K. Heaton

London Centre: W. Wehlau, Ph.D.

Montreal Centre: S. Sundell; L. Duchow

Centre d'Astronomie de Montréal: Mme R. Matteau

Niagara Falls Centre: H. N. A. Maclean

Ottawa Centre: L. A. Higgs, Ph.D.

Centre de Québec: P. Marmet, Ph.D.

St. John's Centre: Mrs. Dora Russell

Saskatoon Centre: Alan T. Blackwell

Toronto Centre: C. G. Clark; H. Creighton, B.Sc.; J. R. Percy, Ph.D.;  
E. R. Seaquist, Ph.D.

Vancouver Centre: Miss G. Atkinson

Victoria Centre: J. L. Climenhaga, Ph.D.

Windsor Centre: Henry Lee

Winnipeg Centre: B. F. Shinn

## HONORARY MEMBERS OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Dr. V.A. Ambartsumian (U.S.S.R.)

Dr. Bart J. Bok (Australia)

Dr. I.S. Bowen (U.S.A.)

Dr. Gerald M. Clemence (U.S.A.)

Prof. H.C. van de Hulst (Netherlands)

Dr. A.H. Joy (U.S.A.)

Dr. J.H. Oort (Netherlands)

Professor H.H. Plaskett (England)

Dr. Martin Schwarzschild (U.S.A.)

Dr. Harlow Shapley (U.S.A.)

Dr. Iosif S. Shklovsky (U.S.S.R.)

Prof. Bengt G. Strömgren (Denmark)

Dr. A. Unsold (Germany)

Dr. R.v.d.R. Woolley (England)



