



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

ANNUAL REPORT 1973

APRIL 1974

REPORT OF THE NATIONAL PRESIDENT

During 1973 the Royal Astronomical Society of Canada joined in the world-wide celebration of the 500th anniversary of the birth of Nicolaus Copernicus. The celebration served to focus attention on the remarkable achievements of astronomy since the days of Copernicus and to highlight the prominent position which modern astrophysics occupies among the physical sciences.

For many of us, the year-long celebration began with the cross-country lecture tour by Professor Wilhelmina Iwanowska, Director of the Institute of Astronomy of Nicolaus Copernicus University, which is located in Torun, Poland, the birth-place of Copernicus. Dr. Iwanowska visited twelve Canadian cities (Halifax, Montreal, Ottawa, Kingston, Toronto, Windsor, Winnipeg, Saskatoon, Calgary, Edmonton, Vancouver and Victoria) where she gave lectures to Centres of the Society and other groups. Her lecture, given on several occasions, entitled "Nicolaus Copernicus and modern Science" (reproduced in the June issue of the *Journal*) brilliantly underlined the importance of Copernicus' work. The tour, moreover, won for her the respect and affection of our members everywhere and served both to unite our membership and strengthen links with astronomers in Poland.

Many projects to mark the quinentennial of Copernicus' birth were undertaken in Canada. In Winnipeg, members of the Society were involved in the building of a solar telescope at the Planetarium of the Manitoba Museum of Man and Nature. This telescope, described in the April issue of the *Journal*, is being financed by the local Polish Societies. Another project, funded by the Polish Copernicus Committees of Canada and the U.S.A., concerns the construction of an astronomical spectrograph to be presented to the Nicolaus Copernicus Observatory, Torun, Poland. The spectrograph, described in the August issue of the *Journal*, was designed and will be tested at the Dominion Astrophysical Observatory in Victoria.

In May, the Society was pleased to learn that the efforts of Canadian astronomers to obtain a large optical telescope had been rewarded. At that time the Canadian Government announced that it had approved participation by Canada with France in the construction of a 3.6-metre telescope on Mauna Kea, Hawaii. When completed in 1978 this telescope will once again give Canadian optical astronomers the opportunity to engage in the most advanced observing programs.

A well-organized General Assembly was held in Ottawa, May 25-27. Noteworthy is the fact that for the first time all eighteen Centres of the Society were represented at the meeting. Our General Assemblies offer an excellent opportunity for members from different Centres to discuss their aims and problems, and it is therefore encouraging that they continue to be well attended. It is anticipated that the meeting to be held in Winnipeg in 1974 will be the most enjoyable and productive yet.

During the year the Society was pleased to recognize the contribution of two outstanding astronomers by awarding them honorary memberships. They were Sir Martin Ryle, Astronomer Royal, and Professor Wilhelmina Iwanowska.

The year 1973 has been a busy and rewarding one. The credit for this goes to all those who worked diligently for the Society - officers and members of the National Council, members of Centre Councils, and many others. To all of them I am deeply grateful.

J. L. Locke, Ph.D., *National President*

REPORT OF THE NATIONAL SECRETARY

The activities of the various Centres of the Society from Coast to Coast in Canada follow this report and record many milestones as well as projects and programs.

During the year Council Meetings were held in Toronto on January 27th and September 22nd. The Annual Meeting was held in Ottawa on May 26th in conjunction with the General Assembly and Council Meetings were held in Ottawa on May 25th and 26th.

Membership in the Society at September 30th fell very slightly as set out below for the years 1972 and 1973.

| | 1972 | 1973 |
|-------------------------|-------------|-------------|
| Calgary | 44 | 59 |
| Edmonton | 52 | 35 |
| Halifax | 26 | 31 |
| Hamilton | 95 | 74 |
| Kingston | 11 | 16 |
| London | 38 | 47 |
| Montreal | 145 | 127 |
| La Société D'Astronomie | 77 | 53 |
| Niagara Falls | 28 | 31 |
| Ottawa | 144 | 186 |
| Quebec | 90 | 93 |
| St. John's | 11 | 15 |
| Saskatoon | 69 | 63 |
| Toronto | 800 | 760 |
| Vancouver | 123 | 99 |
| Victoria | 73 | 88 |
| Windsor | 38 | 29 |
| Winnipeg | 104 | 105 |
| Unattached | | |
| Canada | 168 | 183 |
| United States | 416 | 408 |
| Overseas | 18 | 29 |
| Honorary | 14 | 14 |
| TOTAL: | 2584 | 2545 |

The Society gratefully acknowledges the receipt of annual grants from the National Research Council of Canada and the Ministry of Colleges and Universities of the Province of Ontario.

C. E. Hodgson, *Secretary*

LIBRARIAN'S REPORT

It is with pleasure that I report on the activities of your Library Committee during 1973.

The Committee was appointed by the Council at the 1973 General Assembly and included Mr. Peter Broughton, Mr. Cyril Clark and Dr. Helen Hogg.

Considerable assistance, particularly the slide collection, was received from Mr. Ralph Chou and Mr. Moody Kalbfleisch who undertook the repair of the Society's 16mm film collection.

It is pleasing to report that the number of members availing themselves of the Library's mail service continues to increase and improvements are under

way to increase this service. A number of additions were made to the book collection during the year. The Society was pleased to accept an offer from Bell Canada to provide us, without charge, with a copy of their excellent hour long documentary "About Time". Arrangements are being made to obtain an astronomical film by Mr. Frank Shinn, a member of the Winnipeg Centre. Mr. Shinn's film describes the making of a 12½ inch Cassegrain Telescope for Jack Newton, a member of the Toronto Centre and formerly of Winnipeg.

I should like to express my gratitude to everyone mentioned above, in particular to Mr. Broughton my predecessor, for his considerable assistance and advice. I have enjoyed being your Librarian and hope I will be of further assistance to the Society in the coming year.

Harlan Creighton, *Librarian*

CALGARY CENTRE

Nine regular meetings (on the third Thursday of the month) and ten Council meetings of the Calgary Centre were held during 1973. With two exceptions, these meetings were at the Calgary Centennial Planetarium; the November "Comet Symposium" took place at the University of Calgary - use of these facilities is gratefully acknowledged - and the well-attended Christmas Banquet was held at the Blackfoot Motor Inn.

The speakers and topics were:

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| January | Dr. Wilhelmina Iwanowska: "Nicholas Copernicus and Modern Science"; NASA Film. |
| February | Dr. H. Roy Krouse, University of Calgary: "Stable Isotope Abundances and Their Application to the Study of Meteorites"; CBC Film. |
| March | Messrs. B. Bullock (Earth Resources Technology Society) and L. Bouckhout (Wildlife, Bio.): "Interpretation of Earth Resources Technology Satellite Pictures"; NASA Film. |
| April | Dr. T. A. Clark, University of Calgary: "The Physics of Rainbows and Haloes"; CBC Film. |
| May | Mr. David Ellis, University of Alberta (exchange speaker from the Edmonton Centre): "Vagaries of Climate"; NFB Film. |
| September | Dr. E. F. Milone, University of Calgary: "Skylab - A New Look at Our Nearest Star"; NASA Film; "Report from Epsilon Boötes" (Brian Clarke), "A Month or More on Mount Kobau" (Yogi Haasdyk), "Observing Saturn Occultation, October 17" (Dr. T. A. Clark). |
| October | Dr. D. Venkatesan, University of Calgary: "The Quest"; NASA Film. |
| November | Dr. D. J. I. Fry, University of Calgary (Moderator): "A Comet Symposium"; speakers: Dr. T. Swaddle (Chemistry), Mr. Yogi Haasdyk (Physics), Mr. F. John Howell (Positional) and Mr. John Findlay (Photography). |
| December | Annual Christmas Banquet - with fun and games generated by John Howell, Dave Fry and Bob Nelson - plus "Down Under" by Pearle and Lee Robertson - an illustrated travelogue on Australia and New Zealand. |

During the year, an excellent booklet on the beautiful 1972 solar eclipse observed at Tuktoyaktuk, N.W.T. (with colour photographs) was produced by John Findlay. This 24-page, 9X12-inch brochure is available for \$1.25. At the October meeting, it was announced that the Centre's new 12" telescope will be known as "The Sam Litchinsky Telescope".

R. A. Nelson, *Secretary*

EDMONTON CENTRE

This year was the 40th Anniversary of the founding of the Edmonton Centre. To commemorate the event, our Honorary President, Prof. E. S. Keeping wrote a short book: "The Earlier Years of the Edmonton Centre, R.A.S.C.". We held seven regular and five council meetings. The first regular meeting was on October 16th at which time the new executive and council were elected.

The Annual Banquet was held at the Corona Hotel on November 10th. At this occasion the following presentations were made:

The McBain Trophy for Astrophotography to Paul Deans.

The President's Award for Observational Activities jointly to Eric Peterson and Brian Chrapko.

The establishment of the "Angus Smith Award for Outstanding Telescope Design and Construction" in honor of the late Angus Smith was announced.

The programmes and speakers for the regular meetings were:

- October 16 Several members: "Results of Expeditions to the Total Solar Eclipse of July 10, 1972"
- November 10 Mrs. Marie Fidler-Litchinsky: "Random Thoughts of the R.A.S.C."
- December 11 K. Enhagen and B. Dowling: "Demonstration of Silvering a Mirror", also a color film: "Fields of Space".
- January 8 Ken Hewitt-White of the Ottawa Centre: "Meteors and Meteor Showers".
- February 12 B. Chrapko, E. Peterson and D. Parker: "Amateur Astronomy", also Mrs. S. Chevraux: "The Iron Creek Meteorite or Manitou Stone".
- March 12 David Ellis: "Vagaries of Climate", also Dr. R. W. Carlson: "Ultra-Violet Experiments Onboard Pioneer 10".
- April 9 Dr. L. Cogger of the Calgary Centre: "The Arecibo Radio Telescope".
- May 14 Anthony Whyte and Paul Deans: "Two Expeditions to Mauritania to Observe the Total Solar Eclipse of June 30, 1973".

Anthony Whyte, *Secretary*

HALIFAX CENTRE

Monthly meetings of the Halifax Centre were held in the Nova Scotia Museum, at Halifax. Speakers and subjects were as follows:

- January 3 Dr. Wilhelmina Iwanowska: Copernicus
- February 16 Dr. P. J. E. Peebles: "Big Bang Cosmology"
- March 16 Dr. George Mitchell: "Where are the Solar Neutrinos? – A Crisis in Astrophysics"
- April 27 Dr. C. K. Hoyt: "Some Problems in Telescope Design"
- May 18 Dr. Roy Bishop: "Apollo XVII: A Film View of an Awesome Sight"
- June 22 Mr. Peter Edwards: "Tapes, Slides and a Report: The General Assembly in a Nutshell."
- July 20 Summer Observing Session
- August 18 Summer Observing Session
- September 21 Dr. David DuPuy: QSOs and Arp's Theory of Ejection"

- October 19 Dr. William Silvert: "The Copernican Revolution"
 November 16 Dr. Ken Dunn: "Black Holes"
 December 14 Dr. Roy Bishop: "Kohoutek"

Nova Notes, the Centre publication, has continued to thrive under the editorship of Peter Edwards. The telescope makers completed several reflectors, putting them to immediate use. The increase in observing activity has been most remarkable during the year. Visual and photographic observing are now widely practiced and a few members are carrying out photoelectric experiments. Toward year's end, the Junior Astronomical Society was founded, attracting over a hundred to each of its first meetings. This year has proved an important one in the growth and activity of our Centre.

Walter Zukauskas, *Secretary*

NOTES FROM OBSERVATORIES

The Burke-Gaffney Observatory, Halifax, Nova Scotia

The Observatory at Saint Mary's University has had good attendance this year at open house nights and special tours for school groups. During the period from January 1973 to February 1974, 4200 visitors came to attend Observatory tours and to observe with the telescope on clear Saturday evenings. During January 1974, about 1100 people came to catch a glimpse of the elusive Kohoutek.

On other clear nights, observations were obtained with the 16-inch telescope by staff members on several observational programs. Photoelectric observations of CO Aur were concluded by DuPuy and Brooks. A photoelectric search for variability in several Ca II emission binary systems was initiated. Finally, work proceeded in checking out a 4 x 5 camera for direct plates, and construction began on a small blink comparator. Preliminary observations of several young galactic clusters were also initiated. Mr. Walter Zukauskas joined the Observatory as Research Assistant.

A program for study leading to a Master's degree in Astronomy was approved in December 1973. The program will involve two years of course work and a thesis. Three full-time astronomy faculty members will offer topics for study in observational and theoretical astronomy. Graduate courses will begin in September 1974, with the first degrees to be awarded in 1976.

Dr. David L. DuPuy, *Director*

HAMILTON CENTRE

The Hamilton Centre has had a very active year with the old programmes going on and two new ones commencing. The regular monthly programmes were held at McMaster University and included the following as some of the highlights:-

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| January | Annual Meeting |
| February | Dr. Rene Racine on "Astrophotography - Instrument Design and Performance". |
| March | Dr. John Heard on "Navigation - Past and Present". |
| April | Ken Chilton on the IUAA convention in Sweden and a side trip to Czechoslovakia. |
| May | Duncan Cruickshank on the geology of the moon. |
| November | Dr. John Percy - "Astronomy at Cambridge from Newton to Now". |

December - Bob Lang - "My 10 Years in Astronomy"

The Centre also had its annual picnic with the Niagara Falls Centre and was so poorly attended that the competitions were won equally by each Centre, they having half of them and we the other half. This was mostly because no one Centre could overload its side with "Manpower".

This year's Fautley Award was won by Ken Chilton for his work in public education on his television programme and lectures.

Mr. Chilton started a short program during the regular monthly meetings; a beginner's course which introduced a small section of the Universe in detail at their level.

The Centre has also embarked on two special projects. One of these is the planning of a Spring Symposium for June 15 to be held at McMaster University. The other is the convening of the IUAA convention in 1975 at McMaster and will be a week long affair. This will be a major undertaking and it is hoped that there will be no conflict between the IUAA and the RASC in the timing of their separate affairs. We are currently planning it for the last two weeks of July, depending on the availability at the University.

The major project of the Centre now is "Project Starlab" which is the construction of the Centre's Observatory. We are well under way and have signed a lease of 99 years from the Township of East Flamborough and have commenced the Architectural drawings. We are also in the midst of a fund raising campaign to raise \$25,000 to build the facility and start an annuity fund to maintain the Observatory. This is a major project for the Hamilton Centre and lots of hard work will be involved. It is hoped that the construction of a building will start in the spring of 1974 and completed in late summer or early fall. When it is completed we hope that many will come and visit us at our new home.

Peter H. Ashenhurst, *Secretary*

KINGSTON CENTRE

A report of the meetings of the Kingston Centre from January to March, 1973 is in the Annual Report 1972.

- October 2 Aims and future plans were described. Members visited the Ellis Hall Observatory.
- October 16 A film entitled "Universe". The Instruments and Observers Groups were formed.
- October 30 Slide-lecture on the Algonquin Radio Observatory of the National Research Council by Geoffrey Wyght. A film entitled "Eclipse at Grand'mere".
- November 13 Lecture on Black Holes by Dr. W. Y. Chau, Assistant Professor of Physics at Queen's University. A report by the Observers Group on the Transit of Mercury.
- November 27 A film entitled "Crab Nebula". A display by the Observers Group on recent observing sessions.

Geoffrey J. R. Wyght, *Secretary*

LONDON CENTRE

Another year, another memory. The year's activities commenced with our centre's first annual banquet and the opening of the first London Messier

Contest. Variable Star Coordinator, Steve Sharpe observed the greatest number of deepsky objects from Messier's catalogue and was declared winner at the centre's second annual banquet recently. A telescope making course available at a local community college, instructed by ATM head Peter Andreae, sparked great interest in amateur telescope making in the London area and was without a doubt the largest activity in the centre. Newtonian and Cassigrainian telescopes of all sizes were constructed during the year, including plans for a sixteen inch by Mr. Andreae.

During the summer months a group of three student members successfully worked on a community oriented astronomy project, known as Project Zubenelgenubi. This Opportunities for Youth grant project held many nightly observing sessions at the public parks in the city with the aid of centre members and their 'scopes. Over a thousand persons attended these functions. The major thrust of the project was directed towards the publication of an excellent 100 page Programmed Learning book on modern astronomical concepts, easily understood by the beginner. This new source book of knowledge should be in every centre library soon.

Monthly ATM and Observer's Group meetings were held during the fiscal year, including "film nights", "star nights", discussions and demonstrations. Also during the year auctions were held to pick up our fading financial position.

The centre's newsletter was proud of its accomplishments as it again published many issues of informative reading, in spite of its production changing hands thrice. The new, economical printing format produced, will soon incorporate members' B&W astrophotos.

The London Centre held 12 regular meetings and 5 executive meetings during 1973 and the regular monthly meetings were held at the University of Western Ontario. Our programme for the year was as follows:

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| January 11 | Annual Meeting. After the business the film "Our Universe" was shown. |
| January 26 | First Annual London Centre, R.A.S.C. Banquet, speaker Ken Hewitt-White: 'Major U.S. and Canadian observatories.' |
| February 15 | Dr. Tong, physics dept., U.W.O. presented talk on 'Advantages and Disadvantages of Certain Types of Telescopes'. |
| March 8 | Members' Night; Bill Helps: "Spectroscopy" and David G. Turner, astronomy dept., U.W.O.: "Star Clusters". |
| April 12 | Walter Kammrath, faculty of Dentistry, U.W.O.: "Scanning Electron Microscopy". |
| May 10 | Dr. Bill McGowan, physics dept., U.W.O.: "The Scientist and the Community". |
| May 19 | ATM vs Observer's Group Baseball game. Picnic and star night followed. |
| June 14 | Member's Night; Mike Wallis and Paul Clinton: "Skylab", Mike Wallis: "Solar Observations". |
| July 12 | ATM head, Peter Andreae: "Easy Graph for Figuring a Telescope Mirror". |
| July 21 | ATM vs Observer's Group Baseball game and meteor observing session. |
| August 9 | President Martin Connors: "Eye and Vision". |
| October 11 | Member's Night; films "Space Place" and "Fields of Space". Martin Connors: "Clock Drives" and Mr. Bill Keating, American Optical: "Short Focal Length Telescopes". |

- November 8 Dr. John Medeiros, physics dept. U.W.O.: "Special Relativity".
 December 14 Member's Night; films "K-9000 A Space Oddity", "Galileo Galilei-The Challenge of Reason" and "Beta Hypothese".
 John Conville: "Astrophotography".

Eric J. Clinton, *Secretary*

LA SOCIÉTÉ D'ASTRONOMIE DE MONTRÉAL

Les activités du Centre d'Astronomie de Montréal de la S.R.A.C., se déroulant au sein de la Société d'Astronomie de Montréal, c'est donc les activités de cette dernière que nous sommes obligés de signaler.

A la fin de l'année fiscale 1972-73, la S.A.M. comptait 444 membres dont 59 étaient affiliés à la S.R.A.C., soit 2 membres à vie, 29 seniors et 28 étudiants.

Le Conseil s'est réuni 11 fois au cours de l'année.

Les réunions de la société se tiennent tous les mardis soirs au Jardin Botanique de Montréal. 12 conférences ont été présentées par des invités de marque: Mess Gilles Beaudet (4) Vladimir Paskievici (2) J. Louis Tassoul (2), Georges Michaud, tous astro-physicien de l'Université de Montréal, puis par Mess Marcel Sicotte, Jacques Presbylo et Michel Savage.

Aux autres réunions, différents sujets furent présentés par des membres de la Société.

Lors des réunions du mardi soir, une grande activité anime la section d'optique, où sous la direction de Mess Simard, Coia, Roussin, Beauchamp, Legris et Rousseau, près de 70 miroirs ont été polis et une cinquantaine de télescopes montés. Plusieurs de ces télescopes furent présentés au concours international de Stellafane et se méritèrent les prix suivants: M. Henri Coia, premier prix de mécanique, M. Paul Houde, 2^{ème} prix d'optique, M. Jean Mageau (14 ans) premier prix d'optique junior et M. Gilles Bélanger (14 ans) 2^{ème} prix junior de mécanique; c'est d'ailleurs une habitude des nôtres de récolter, à chaque année, plusieurs prix à ce concours.

La Société publie un journal mensuel "LE QUEBEC ASTRONOMIQUE" et depuis 9 ans un "ANNUAIRE ASTRONOMIQUE DE L'AMATEUR", qui, sous une forme quelque peu différent, est L'Observer's Handbook, présente en français.

Au cours de l'été, lors d'une réunion tenue à Nicolet et une autre tenue à Montréal, une tentative de regroupement de tous les clubs d'astronome amateurs d'expression française au Canada, a été lancée.

Les adeptes de la science d'Uranie se font de plus en plus nombreux au Québec et d'ici quelques années l'astronomie occupera une des premières places dans le domaine des loisirs scientifiques et para-scolaires.

Rolland Noel de Tilly, *Secrétaire*

NIAGARA CENTRE

In 1973, the Niagara Centre began a very ambitious project. The construction of a Centre observatory. Land for the observatory has been donated by one of our members and preliminary plans for the observatory have been developed. Efforts are continuing to develop financing for this project.

The Centre presented a number of both public and membership Star Nights during the year. Attendance was excellent for these programmes.

In 1973, the Centre held our Annual Picnic with the members of the Hamilton Centre as guests. This picnic is rotated every year between the Hamilton and Niagara Centres with the competition in softball between the two Centres as the main attraction.

Our regular Centre meetings were held at the Drummond Hill Library in Niagara Falls and were as follows:

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| January 11 | Election of Officers |
| January 17 | Annual Banquet, Guest speaker - Ed Lindberg: "Sundials" |
| February 8 | Bob Winder: "Lining Up the Polax Axis" |
| March 8 | Al Kindy |
| April 12 | Members Night |
| May 10 | Bob Winder: "General Assembly Paper" |
| October 11 | Film Night |
| November 8 | Al Kindy: "Mythology in Astronomy" |
| December 13 | Hugh Maclean: "Astrophotography" |

Robert C. Doran, *Secretary*

OTTAWA CENTRE

Ottawa Centre members look back on an active and successful year. Membership increased slightly as did attendance at lecture meetings. Observers Group meetings and observing programs continued to elicit an enthusiastic following.

The most significant effort of the year was the hosting of the 1973 General Assembly, which was held on the Carleton University Campus. A committee worked under the chairmanship of former National President, Malcolm M. Thomson, and activities were presided over by our president, Mary I. Henderson. It is gratifying to report that the response from over 200 delegates representing all centres of the RASC was favourable.

The first lecture meeting of the year, a special event arranged to celebrate the 500th anniversary of the birth of Copernicus, was held in the National Research Council auditorium, Sussex Street, on January 8, 1973. On that occasion Dr. W. Iwanowska, Director of Nicolaus Copernicus University in Torun, gave a talk titled: "Nicholaus Copernicus, Founder of Modern Astronomy and Pioneer of Modern Science" Dr. Iwanowska's talk was enjoyed by a large audience of Ottawa Centre members and guests.

The annual Dinner Meeting was held at the Sampan Restaurant. We were fortunate to have as guest speaker, Dr. J. L. Locke of the National Research Council and National President of the Royal Astronomical Society of Canada. Dr. Locke's topic was "Explosions in Astronomy".

With the above exceptions all meetings were held in the Geophysical Laboratory, Earth Physics Branch, Department of Energy Mines & Resources. A schedule of lecture meetings follows:

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| February 22 | Dr. Sydney van den Bergh: David Dunlap Observatory: "Supernovae" |
| March 20 | Dr. C. H. Costain, Dominion Radio Astrophysical Observatory: "Aperture Synthesis Techniques in Radio Astronomy" |
| April 6 | Members of the Observers Group presented: "Pictures in the Sky", "Einstein should have been a Greek", and "Apollo 17, the Beginning" |
| May 10 | Film night: "The Crab Nebula" |

- September 19 Dr. G. G. R. Buchbinder, Earth Physics Branch, E.M.R.:
"Moonquakes and the Structure of the Moon"
- October 17 Dr. John R. Percy, David Dunlap Observatory and Erindale
College, University of Toronto: "Astronomy in Cambridge
from Newton till Now"
- November 6 Dr. Lorne Avery, National Research Council: "Kohoutek -
Comet of the Century?"
- December 4 Film night: "Exploring the Milky Way" and "Birth and
Death of a Star"

The Observer Group continues to meet on the first Friday of each month, September to June, under the Chairmanship of T.E.D. Bean. Rolf Meier took over as editor of Astronotes after Tom Tothill moved to British Columbia. The newsletter continues to receive an enthusiastic response from points far and wide.

The Observer's Group will remember 1972 - 1973 as a year of travel for several energetic members. Four witnessed the history-making Apollo 17 launch and a larger number viewed the June 30th, total Solar Eclipse from the coastal waters off Africa. We are all very proud of the film prepared during and after the first jaunt: "Apollo 17, the Beginning" and photographic efforts of those who viewed the eclipse were much appreciated by home bound friends. Observations, both visual and photographic, continue with the 16-inch Newtonian telescope at North Mountain, a popular site for members and guests, while a faithful few concentrate their activities at the Quiet Site.

Observer Group awards were presented to the following members at the Annual Dinner Meeting: Observer of the Year - Ken Hewitt-White; Variable Star Award - Cathy Hall; Merit Awards - Ken Perrins and Stan Mott.

Mary W. Grey, *Secretary*

SASKATOON CENTRE

The Saskatoon Centre has been very busy during 1973. General and Executive meetings were held monthly, and the minutes of all meetings were published in the Centre's newsletter.

Speakers for General Meeting's included Dr. Iwanowska, speaking on Copernicus, Dr. Skinner on Cosmology; Jacob Wiebe provided slides of a Solar Eclipse; Dr. Holden and Gordon Patterson spoke on their trip to the General Assembly in Ottawa; and Dr. Ian Halliday spoke on Comets.

Classes in Fundamentals were held on Tuesdays, alternating theory with optional topics. Astrophotography and Observer's Groups are held on Saturdays.

Wednesday and Sunday are reserved for open house throughout the year. Group tours were given on Friday's with groups from around the province to visit the observatory.

In July the Saskatoon Centre's First Annual Wiener Roast Picnic was held, followed by a game of baseball till sundown. As the sky darkened members set up telescopes to view the clear sky. After a midnight snack the evening wound up.

Elections Were Held in October, bringing in new executive members and changing the executive position of the Vice-President to Vice-President Public Relations.

In November and December three Centre members gave lectures at the Saskatoon Library. Alan Blackwell - Meteorites; Ron Waldron - The Christmas Star; and Gordon Patterson - The Comet Kohoutek.

In all it was a very busy year for everyone at the Saskatoon Centre.

Melodie Andrews, *Secretary*

TORONTO CENTRE

The year 1973 has come and gone, but for hundreds of Toronto Centre members it will be long remembered, for it was a most eventful and successful year. As well as our regular ongoing activities, there were several additional happenings which served to further tax the time and energy of those involved, as follows:-

The June 30th Solar Eclipse, saw a strong representation of Toronto Centre members. Most of these observed this, the second longest total solar eclipse of this century, from aboard the comfort of the Liner Canberra.

Our participation in the fourth annual Astronomy Club Day, held at Seneca College, for which most of the credit goes to Andreas Gada, who also organized our summer program, including two meetings and a picnic.

There was continued discussion with M.T.R.C.A. toward a Centre Observatory.

We are continuing legal proceedings toward incorporation of Toronto Centre. While there has been a delay, due to technicalities involving the National Society, the project should see fulfillment in 1974.

The design and construction of a photoelectric photometer for the Centre by Denis Halley, who also served as our liaison with the McLaughlin Planetarium.

There is one sad note to report and that is the passing of four Toronto Centre members – Warren Eyre, Fred Kolash, Jesse Ketchum and Franklin Young – who will be deeply missed by those who knew and worked with them.

Co-ordinating our activities and, in general, administering the affairs through the medium of four Council Meetings and two meetings of the Executive of the Toronto Centre, was its Council, which in 1973 consisted of Harlan Creighton, Jan van Kranendonk, René Racine, Dan Ostler, Alf Scott, Fred Troyer, D. J. Fitzgerald, John Percy, Denis Halley, John Morriss, Vern Ramsay, Richard Berry, Jim Cobban, Ralph Chou, George Foster, Peter Tattersall, Ray Thompson and Dr. Helen Hogg as our Honourary President. The main element of the Centre's activities every year is our program of general meetings. This year's committee, chaired by Dr. Jan van Kranendonk, succeeded through their considerable efforts in providing us with an excellent series of meetings. In 1973 this included 8 Members' Nights, a joint meeting with the R.C.I., a picnic, two open houses and several distinguished guest speakers. The Centre is indebted to the Refreshment Committee, headed by Penny McCabe, for welcome refreshments after each general meeting.

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| January 12 | Annual Meeting and Members' Night |
| January 12 | Joint R.A.S.C./R.C.I. Meeting |
| January 26 | Prof. Peter G. Martin – "Interstellar Dust" |
| February 2 | Members' Night |
| February 16 | Dr. Francis Ahearn – "Modern Astronomical Instrumentation" |
| March 2 | Members' Night |
| March 16 | Prof. Helen S. Hogg – "Globular Clusters and the Variable Stars in Them" |
| March 30 | Prof. H. I. Schiff – "Properties of the Stratosphere and Potential Dangers of Supersonic Transport" |
| April 13 | Visit to the Satellite Data Laboratory of the Atmospheric Environment Service |

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| April 27 | Members' Night |
| May 11 | Prof. B. P. Stoicheff – "LASERS - Light Beams to the Stars" |
| June 15 | Report on the General Assembly |
| July 25 | Members' Night |
| August 15 | Members' Night – Astrophotography Seminar |
| August 25 | Picnic |
| September 7 | Open House at the D.D.O. |
| September 28 | Report on the 1973 Solar Eclipse |
| October 12 | Prof. John Percy – "Astronomy at Cambridge from Newton to Now" |
| October 26 | Members' Night |
| November 9 | Members' Night |
| November 23 | Dr. J. F. Heard – lecture |
| December 7 | Jack Newton – "Astrophotography" |

An important aspect of the Centre's activities is in the field of public education and this year Ralph Chou and his Public Star Night Committee have done an outstanding job. In addition to three Star Nights in Huron Park, Sibbald Point and Scarborough College, Ralph and his many enthusiastic co-workers put on three public lecture series in the Richview Library. The 1974 program is already taking shape and promises to introduce amateur astronomy to an even larger portion of the public.

1973 was the fourth successful year for the Study Group, chaired by Ian McGregor. The program this year consisted of three parts:

- a series of regular bi-monthly meetings from January to March;
- a five-week course for grades 6, 7 and 8 students, presented at the invitation of the Toronto Board of Education;
- an eight-week session in October and November to determine whether weekly meetings instead of bi-monthly affected the quality of the program.

While the Fall weekly series was a great success, the demand on Ian and his assistants has necessitated reverting to bi-weekly meetings this Spring.

The Optical Workshop has undergone a few changes this year and is now being organized by Bill Weller. Anyone wondering what to do with all their spare time this winter should consider joining Bill and his group each Saturday from 10 - 3.

And for those building a telescope and wondering where to go from there, Ray Thompson and the Observational Activities Committee will be glad to help.

And last, but certainly not least, in fact just the opposite, is 'SCOPE, the single most unifying aspect of Toronto Centre. It brings us the news, fills us in on missed meetings, informs us of upcoming events and is in general the voice of Toronto Centre, of you its members. Jim Cobban and his editorial committee have done an outstanding job. Let's give them our full support in 1974!

In closing, on behalf of the Centre, I wish to say thanks for the enormous assistance received from the McLaughlin Planetarium and the David Dunlap Observatory. Also our appreciation to Rosemary Freeman, National Executive Secretary, for her assistance to our Executive and Council.

It's been a busy and most enjoyable year. Let's all try to make 1974 that much more successful.

Dan H. Ostler, *Secretary*

VANCOUVER CENTRE

1973 was a year of change for the Vancouver Centre, and from all the indications,

the changes were all for the good. Both R.A.S.C. membership and astronomical interest within the community are up significantly over last year. One of the most important changes was the influx of new blood into the Centre. Several new members keenly interested in the observational side of astronomy, transferred to our Centre from the Ottawa group. These include such R.A.S.C. names as Observer, Ken Hewitt-White; Telescope-maker, Alan Miller; and combination Observer/Telescope-maker, Mr. Tom Tothill. In addition, on the observational side, Vancouver member Craig McCaw secured some observing time with the Dominion Astrophysical Observatory in Victoria.

It was a year of travel for Centre members as well. Five Vancouverites travelled by various means to an eventual rendezvous in Mauritania, to observe the July 1st total eclipse of the sun. Two more members travelled to Central America for the December annular eclipse, hoping to catch a glimpse of the ill-fated Comet Kohoutek.

Still under observational activities, considerable organization was put into starting both the Variable Star and the Meteor Observational program. Numerous guest speakers covered both these subjects at the General Meetings. Observational activities in general were enhanced by the acquisition of over a dozen new telescopes by Centre members.

There were many interesting speakers at the General Meetings throughout the year covering such topics as Variable Stars, Intelligent Life in the Universe, Black Holes in General, Black Holes in the Cygnus X-1 region, and Radio Astronomy by National President, Dr. Jack Locke.

A must lecture series put on by UBC's extension department and enjoyed by many Centre members was Relativity and Cosmology by Griffith Observatory's Director, Dr. William Kauffman.

A new feature included in Centre activities this year was an expanded version of Centre Newsletter "Nova". Under its new Editor, Dave Dodge, and with the able assistance of a few volunteers, Nova has more than tripled in content, and boasts circulation, in Canada, the United States, and Australia. Another new feature included in all the General Meetings of the Centre, was a Sky-this-Month presentation by Ken Hewitt-White. This section was enjoyed by those regulars familiar with the visible sky and was especially useful for the numerous guests and new members attending each meeting. Ken also served on the Planetarium staff answering enquiries and presenting lectures dealing with Comet Kohoutek during the final two months of 1973 and the first month of 1974.

All in all the year was extremely successful, both for the Centre and for individual members within the Centre. Vancouver looks forward to bigger and better things in 1974.

David F. Hurd, 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 1973 and the Council held three meetings to plan the lectures and conduct the business of the centre.

The speakers and topics at the regular meetings were:

- January 12 Annual Meeting and Dinner. Dr. Batten showed slides of, and described his recent trip to South America.
- February 14 Mr. B. W. Baldwin, University of Victoria - "Black Holes".
- March 14 Panel discussion, consisting of : Dr. A. H. Batten, Dr. G. Tatum,

Mr. G. Ball and Mr. M. Hale.

- April 11 Activities Night. Exhibits and short talks by members.
 October 10 Dr. C. D. Scarfe, University of Victoria - "Timing the Minima of Eclipsing Variables".
 November 14 Mr. R. Dancy, Dominion Astrophysical Observatory - "Figuring Mirrors for Large Telescopes".
 December 12 Panel discussion, members: Dr. J. Glimenhaga, Dr. M. Fletcher and Mr. R. Williams.

The Victoria Centre and the General Public had the pleasure of hearing Dr. W. Iwanowska speak on two occasions, January 22nd and 23rd. She came to Canada by invitation of the R.A.S.C. on the occasion of the 500th Centenary of Copernicus.

Again this year, the Centre maintained a booth at the Hobby Show held in the spring by the Victoria Lapidary Society and also looked after a booth at the Dominion Astrophysical Observatory on Saturday evenings when the Observatory has been open to the public.

Mr. George Ball was on duty at the University of Victoria each Saturday evening, weather permitting, for observing sessions. Also, through his leadership, several members have completed mirrors during 1973.

Martin Shepherd, *Secretary*

WINDSOR CENTRE

The Windsor Centre held nine regular meetings and three council meetings during the past year. An outline of each monthly session follows.

1972

- November 21 Election of officers for 1973
 James McTavish gave a presentation based on the film "Comets, Meteors and Planetoids."
 December 19 Dave Toth discussed his lunar eclipse slides and Gary Drouin reported on peculiar solar activity during the August '72 eclipse.

1973

- January 16 A panel discussion on aligning the optical train of a reflecting telescope.
 February 20 A panel discussion of the planet Mars.
 March 20 Student members presented a talk on photography of astronomical objects.
 April 17 Joint meeting with physics department, University of Windsor, commemorating Copernicus' quincentenary.
 May 15 Discussion of plans for the new St. Clair College observatory.
 September 18 An observing session was held at the St. Clair observatory site.
 October 16 Gary Drouin gave a talk on the organization of an astronomical observing program for the Windsor Centre.

Brian Dorrepaal, *Secretary*

WINNIPEG CENTRE

During 1973 the Winnipeg Centre held nine general membership meetings at the Fletcher-Argue Building, University of Manitoba, and one special meeting at the Manitoba Museum of Man and Nature Planetarium, all under the Chairmanship of our President Mr. Del Stevens. A new Secondary Monthly Meeting started in October, and Chaired by our first Vice President Mr. Roy Belfield, is proving successful. Four meetings of the Executive Council were held, dealing efficiently

(continued on page 25)

AUDITOR'S REPORT

To the Members and Council of
The Royal Astronomical Society of Canada.

I have examined the statement of financial position of The Royal Astronomical Society of Canada as at December 31, 1973 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, because of their nature, are not susceptible to complete verification by audit procedure and are therefore shown in the accompanying statement as they have been recorded in the books of the Society. My verification of these items was limited to a comparison of recorded receipts with bank deposits.

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, 1973 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 18, 1974.

THE ROYAL ASTHMA SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE BRONCHOPNEUMONIE DU CANADA

STATEMENT OF FINANCIAL POSITION

AS AT 1973

(With comparative figures for December 31, 1972)

1973 1972

A S S E T S

Current Liabilities

Current Assets

| | |
|---------------------------------|----------|
| Cash | \$ 8,863 |
| Term deposit | 2,000 |
| Accounts receivable | 13,994 |
| Grants receivable | - |
| Marketable securities (at cost) | 3,019 |
| Accrued bond interest | 190 |
| Prepaid expenses | 257 |

\$28,323

\$ 6,970

Accounts payable

-

5,061

1,000

3,019

112

243

Deferred Revenue

Membership dues in advance

Unappropriated (per statement)

\$16,413

Special Funds

Ruth Northcott Memorial Fund (per statement)

7,861

\$ 6,900

Fixed Assets (at cost)

| | |
|--------------------------------|----------|
| Land | \$17,000 |
| Building | 17,500 |
| Office furniture and equipment | 5,190 |
| Apartment equipment | 1,213 |
| | \$40,903 |
| Less: Accumulated depreciation | 11,995 |

28,908

\$17,000

17,500

4,338

1,120

\$39,961

11,213

Ruth Northcott Memorial Fund

Surplus (per statement)

\$28,750

Library (nominal value)

100

\$ 100

\$65,192

\$52,168

APPROVED ON BEHALF OF THE COUNCIL:

J. L. LOCKE, PRESIDENT

CYRIL G. CIARK, TREASURER

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

STATEMENT OF FINANCIAL POSITION

AS AT 1973

(Comparative figures for December 31, 1972)

| 1973 | 1973 | 1972 |
|--------------------------------|--|--------------------|
| <u>LIABILITIES AND SURPLUS</u> | | |
| <u>Current Liabilities</u> | | |
| \$ 6,970 | Accounts payable and accrued charges | \$ 5,801 \$ 3,639 |
| - | | |
| 5,060 | | |
| 1,000 | | |
| 3,010 | <u>Deferred Revenue</u> | |
| 110 | | |
| 240 | Membership fees for ensuing year | \$ 8,136 \$ 6,724 |
| | Advance subscriptions for Journal and Handbook | 21,380 9,682 |
| \$16,410 | Unappropriated life membership fees (per statement) | <u>4,040</u> 3,557 |
| | | 33,556 \$19,963 |
| \$ 6,900 | | |
| | <u>TOTAL LIABILITIES</u> | \$39,357 \$23,602 |
| \$17,000 | <u>Ruth Northcott Memorial Fund Reserve</u> | 7,861 \$ 6,901 |
| 17,500 | | |
| 4,330 | | |
| 1,120 | <u>Surplus</u> (per statement) | 17,974 21,665 |
| \$39,960 | | |
| 11,210 | | |
| \$28,750 | | |
| \$ 100 | | |
| \$52,160 | | \$65,192 \$52,168 |

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

STATEMENT OF GENERAL REVENUE AND EXPENSE

FOR YEAR ENDED DECEMBER 31, 1973

(With comparative figures for year ended December 31, 1972)

| <u>R E V E N U E</u> | <u>1 9 7 3</u> | <u>1 9 7 2</u> |
|--|-----------------|-----------------|
| Membership fees | | |
| R.A.S.C. Centres | \$ 8,854 | \$ 8,700 |
| Individual members | 4,787 | 4,665 |
| Life membership reserve - annual appropriation | 416 | 371 |
| | \$14,057 | \$13,736 |
| Grants and Donations | | |
| Government of Canada - annual grant | \$ 5,000 | \$ 5,000 |
| Province of Ontario - annual grant | 1,000 | 1,000 |
| Miscellaneous donations | 510 | 17 |
| | 6,510 | \$ 6,017 |
| Publications | | |
| Journal of the R.A.S.C. | \$ 5,714 | \$ 4,876 |
| Observer's Handbook | 20,910 | 22,452 |
| Reprints and publication fees | 3,930 | 5,221 |
| Advertising | 1,725 | 1,605 |
| | \$32,279 | \$34,154 |
| Less: Agents' discounts | 3,068 | 4,557 |
| | 29,211 | \$29,597 |
| R.A.S.C. Building (per statement) | | |
| Excess of revenue over expense (expense over revenue) | 1,187 | (\$ 1,486) |
| Miscellaneous Revenue | | |
| Interest earned | \$ 419 | \$ 358 |
| Insignia sales | 36 | 30 |
| | 455 | \$ 388 |
| <u>TOTAL REVENUE</u> | <u>\$51,420</u> | <u>\$48,252</u> |
| <u>E X P E N S E</u> | | |
| Publications | \$39,511 | \$37,383 |
| Office salaries | 8,906 | 7,927 |
| Postage and shipping | 1,651 | 2,433 |
| Stationery, printing and supplies | 892 | 635 |
| General and office expenses | 885 | 901 |
| Telephone | 300 | 194 |
| Canada pension plan and unemployment insurance | 163 | 302 |
| Library accessions | 321 | 612 |
| Annual life membership allotment to Centres | 456 | 412 |
| General assembly and travelling expenses | 656 | 150 |
| Supplementary incorporation costs | 300 | - |
| Medals and awards | 78 | 359 |
| Bank charges and exchange | 443 | 369 |
| Depreciation of office furniture and equipment | 223 | 138 |
| Bad debts | 326 | - |
| <u>TOTAL EXPENSE</u> | <u>\$55,111</u> | <u>\$51,815</u> |
| <u>EXCESS OF EXPENSE OVER REVENUE</u> | <u>\$ 3,691</u> | <u>\$ 3,563</u> |

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

STATEMENT OF BUILDING REVENUE AND EXPENSE

FOR YEAR ENDED DECEMBER 31, 1973

(With comparative figures for year ended December 31, 1972)

| <u>REVENUE</u> | <u>1 9 7 3</u> | <u>1 9 7 2</u> |
|--|-----------------|-------------------|
| Rentals for space not occupied by the Society | \$ 4,324 | \$ 3,540 |
| | | |
| <u>EXPENSE</u> | | |
| Property taxes | \$ 1,005 | \$ 1,037 |
| Heating | 770 | 837 |
| Light, gas and water | 216 | 236 |
| Maintenance and repairs | 481 | 2,269 |
| Insurance | 106 | 96 |
| Depreciation of building | 438 | 438 |
| Depreciation of equipment | <u>121</u> | <u>113</u> |
| <u>TOTAL EXPENSE</u> | <u>3,137</u> | <u>\$ 5,026</u> |
| | | |
| <u>EXCESS OF REVENUE OVER EXPENSE (EXPENSE OVER REVENUE)</u> | <u>\$ 1,187</u> | <u>(\$ 1,486)</u> |

SCHEDULE OF FIXED ASSETS AND ACCUMULATED DEPRECIATION

AS AT DECEMBER 31, 1973

| | <u>COST</u> | <u>ACCUMULATED DEPRECIATION</u> | | |
|---------------------------------------|-----------------|---------------------------------|--------------------------------|------------------------------|
| | | Balance <u>Dec. 31/72</u> | Depreciat'n <u>For Year</u> | Balance <u>Dec. 31/73</u> |
| Land | \$17,000 | \$ - | \$ - | \$ - |
| Building | 17,500 | 6,875 | 438 | 7,313 |
| Office furniture and equipment | 5,190 | 3,343 | 223 | 3,566 |
| Apartment equipment | <u>1,213</u> | <u>995</u> | <u>121</u> | <u>1,116</u> |
| | <u>\$40,903</u> | <u>\$11,213</u> | <u>\$ 782</u> | <u>\$11,995</u> |

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

STATEMENT OF SURPLUS

FOR YEAR ENDED DECEMBER 31, 1973

(With comparative figures for year ended December 31, 1972)

| | | |
|--|-----------------|-----------------|
| | 1 9 7 3 | 1 9 7 2 |
| Surplus at beginning of the year | \$21,665 | \$25,200 |
| <u>Deduct:</u> Excess of expense over revenue for the year | <u>3,691</u> | <u>3,900</u> |
| Net surplus at end of the year | <u>\$17,974</u> | <u>\$21,300</u> |

STATEMENT OF UNAPPROPRIATED LIFE MEMBERSHIP FEES

| | | |
|--|-----------------|-----------------|
| Balance at beginning of the year | \$ 3,557 | \$ 3,400 |
| <u>Add:</u> Life membership fees received during the year | <u>900</u> | <u>400</u> |
| | \$ 4,457 | \$ 3,800 |
| <u>Deduct:</u> Appropriation to general revenue for the year | <u>416</u> | <u>300</u> |
| Balance at end of the year | <u>\$ 4,041</u> | <u>\$ 3,500</u> |

STATEMENT OF RUTH NORTHCOTT MEMORIAL FUND

| | | |
|---|-----------------|-----------------|
| Balance at beginning of the year | \$ 6,901 | \$ 6,100 |
| <u>Add:</u> Proceeds from Estate of Ruth J. Northcott | 230 | 300 |
| Public contributions | 200 | - |
| Interest earned | <u>530</u> | <u>400</u> |
| Balance at end of the year | <u>\$ 7,861</u> | <u>\$ 6,800</u> |
| <u>Composition of fund:</u> Cash | \$ 351 | \$ 2,900 |
| Securities | 7,000 | 4,000 |
| Accrued interest | <u>510</u> | <u>-</u> |
| | <u>\$ 7,861</u> | <u>\$ 6,900</u> |

Centre d'Astronomie
 Niagara Falls
 Montreal
 London
 Kingston
 Hamilton
 Halifax
 Edmonton
 Calgary

\$ 380.00
 \$ 4,019.00
 N
 \$ 372.50
 \$ 750.50
 \$ 750.00
 \$ 750.50
 \$ 750.50
 \$ 114.00
 \$ 6,900.00
 \$ 114.00
 \$ 114.00
 \$ 114.00
 \$ 114.00

REVENUE

| | Calgary | Edmonton | Halifax | Hamilton | Kingston | London | Montreal | Centre d'Astronomie Montreal | Niagara Falls |
|------------------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------|------------------------------------|------------------|
| REVENUE | | | | | | | | | |
| Membership Fees | \$1,411.55 | \$382.50 | \$367.50 | \$750.00 | \$250.50 | \$372.50 | N | \$ 4,019.00 | \$380.00 |
| Life Member Grants | | 8.00 | 12.00 | 12.00 | 16.00 | 4.00 | O | | |
| Donations | | | 40.00 | .50 | | 5.00 | T | 355.00 | |
| Educational Activities | | | 143.22 | | | | | 1,038.00 | |
| Interest and Dividends | 125.82 | 22.14 | .28 | 16.62 | 2.84 | 24.26 | R | 391.00 | 7.93 |
| Sales of Handbooks Net | | | 5.50 | | 8.50 | 16.00 | E | (849.00) | 2.00 |
| Advertising | | | | | | | P | | |
| General Assembly | | | | 46.10 | | 219.04 | O | 631.00 | 15.10 |
| Miscellaneous | | 35.00 | | | | | R | | |
| Total Revenue | \$1,537.37 | \$447.64 | \$568.50 | \$825.22 | \$277.84 | \$640.80 | T | \$ 5,585.00 | \$405.03 |
| | | | | | | | E | | |
| | | | | | | | D | | |
| EXPENDITURES | | | | | | | | | |
| Fees Remitted to N.O. | 1,284.50 | 229.50 | 220.50 | 450.00 | 112.50 | 298.50 | | | 147.00 |
| Library | | | | | | | | | |
| Meetings and Newsletters | 276.37 | 138.31 | 64.35 | 62.50 | 63.22 | 23.00 | | 746.00 | 129.80 |
| Annual Dinner-net | | | | | | | | | 36.75 |
| General Assembly | | | | | | | | | |
| Equipment and Supplies | | | 165.30 | 30.00 | 12.00 | 85.00 | | 536.00 | |
| Office Administration | | | | | | 4.66 | | 1,183.00 | |
| General Expense & Audit | 35.73 | 19.67 | 1.40 | 125.11 | 48.80 | 161.00 | | 1,186.00 | 12.04 |
| Educational Activities | | | 44.94 | | | 25.00 | | | |
| Insurance | | | | 55.00 | | | | | |
| Awards and Donations | 50.00 | 60.00 | 40.00 | | | | | | |
| Operating Expense-Observatory | | | | 78.41 | | | | | |
| Miscellaneous | * 822.72 | | .25 | | 1.20 | 56.96 | | | 28.82 |
| Total Expenditures | \$2,469.32 | \$447.48 | \$536.49 | \$801.27 | \$237.72 | \$654.12 | | \$ 3,651.00 | \$354.41 |
| Surplus or (Deficit) on Operations | (931.95) | .16 | 32.01 | 23.95 | 40.12 | (13.32) | | 1,934.00 | 50.62 |
| Balance from 1972 | \$1,407.13 | \$586.20 | \$ 85.50 | \$662.38 | \$141.31 | \$249.81 | | \$15,638.00 | \$387.14 |
| Balance to 1974 | \$ 475.18 | \$586.36 | \$117.51 | \$686.33 | \$181.43 | \$236.49 | | \$17,572.00 | \$437.76 |
| Other Assets | 3,284.61 | | | | | | | 8,849.00 | |

* Eclipse Booklets 822.72 (x) *Scope Net (y) Telescope

REPORTS OF TREASURERS OF CENTRES

| | Ottawa | Quebec | St. John's | Saskatoon | Toronto | Vancouver | Victoria | Windsor | Winnipeg |
|-------------------------------|-------------------|--------|------------|-----------------|--------------------|-------------------|-------------------|-----------------|-----------------|
| REVENUE | | | | | | | | | |
| Membership Fees | \$2,387.50 | N | | \$435.00 | \$ 7,128.14 | \$1,123.65 | \$ 845.00 | \$157.50 | \$190.00 |
| Life Member Grants | 76.00 | O | | 4.00 | | 32.00 | | | 8.00 |
| Donations | 327.00 | T | | 28.50 | | 595.00 | | | |
| Educational Activities | 284.05 | | | | | | 75.49 | | |
| Interest and Dividends | 20.59 | R | | | 322.32 | 48.57 | 135.82 | 5.03 | 5.43 |
| Sales of Handbooks-Net | 43.00 | E | | | | | 21.00 | 6.00 | 1.00 |
| Advertising | | P | | 80.31 | | | | | |
| General Assembly Net | 150.43 | O | | | | | 2.00 | .26 | |
| Miscellaneous | 26.15 | R | | | | | | | |
| Total Revenue | \$3,314.72 | T | | \$547.81 | \$ 7,128.14 | \$1,799.22 | \$1,079.31 | \$168.79 | \$204.43 |
| EXPENDITURES | | D | | | | | | | |
| Fees Remitted to N.O. | \$1,492.50 | | | \$261.00 | \$ 4,518.00 | \$ 847.50 | \$ 390.00 | \$116.20 | \$ 84.00 |
| Library | 117.00 | | | | | | | | |
| Meetings and Newsletters | 329.10 | | | 66.04 | 898.26 | 135.63 | 16.20 | 72.13 | 59.00 |
| Annual Dinner-Net | 25.05 | | | | | | 60.12 | | |
| General Assembly | | | | 100.00 | 126.00 | | 130.00 | | |
| Equipment and Supplies | 3.21 | | | | | | 141.11 | | 58.57 |
| Office Administration | 94.30 | | | 111.54 | | 110.79 | 113.62 | | |
| General Expense | 192.71 | | | 9.00 | 650.50 | 105.40 | | | |
| Educational Activities | 89.69 | | | | | 115.00 | | | |
| Insurance | | | | 103.16 | | | 12.41 | | |
| Awards and Donations | | | | 35.00 | | | | | |
| Operating Expense-Observatory | | | | | | | | | |
| Miscellaneous | 12.00 | | | | | x 660.44 | y 602.55 | 4.60 | 100.40 |
| Total Expenditures | \$2,355.56 | | | \$685.74 | \$ 6,853.20 | \$1,916.87 | \$ 863.46 | \$192.93 | \$301.97 |
| Surplus or (Deficit) | 959.16 | | | (137.93) | 274.94 | (117.65) | 215.85 | (24.14) | (97.54) |
| Balance From 1972 | \$ 758.40 | | | \$213.02 | \$14,054.80 | \$1,417.48 | \$3,058.60 | \$200.72 | \$256.21 |
| Balance to 1974 | \$1,717.56 | | | \$ 75.09 | \$14,329.74 | \$1,299.83 | \$3,274.45 | \$176.58 | \$158.67 |
| Other Assets | 869.57 | | | | | | 383.25 | | |

with the business of the Centre. Mr. Del Stevens attended the General Assembly and an Astronomy Conference in Omaha, Nebraska, supplying the membership with detailed information of both meetings. Mr. Paul Moffat and Mr. Willard Elliot observed the June 30th Solar Eclipse from the 'Canberra' and have recorded the event on video tape, film, slides, and audio tapes for the benefit of the membership.

The Local Planning Committee for the 1974 Joint Meeting of the R.A.S.C. and A.A.V.S.O. has been active throughout the year under the Chairmanship of Mr. Richard Bochonko.

Other active committees are, the Winnipeg Centennial Observatory Committee, the Observing Committees and the Telescope Making Groups.

Miss Ella Dack carried out her duties as Secretary and the Editor of *Winnicentrics*, efficiently during this period.

The programmes for the year were:

- | | |
|--------------|---|
| January 15 | Special guest Dr. Wilhelmina Iwanowska - Copernicus and Modern Science. |
| February 9 | Film - "Universe", Mr. Paul Moffat - Satellites and Other Things. |
| March 9 | Mr. B. F. Shinn - Handbook Discussion, Observing Reports, Mr. Paul Moffat - Observatory Plans, Mr. Jack Newton - Astrophotography |
| April 13 | Mr. Jim Gould - Handbook Discussion, Film - "Stonehenge Mystery", Junior Symposium - Chairman, Mr. John Wunderlich, Mr. Alan Dyer - Planets, Mr. Larry Frostiak - Cosmology, Mr. William Krosney - Meteor Observing. |
| May 11 | Dr. George Lubinski - The Days of Brahma and the Cosmic Time Scale of Organic Evolution, The Winnipeg Centennial Observatory Fund - drawing for three colour television sets. |
| June 8 | Reports of Chairmen, information on Comet Kohoutek, 1973 General Assembly Report, Winnipeg Centre's prize won at the General Assembly for best display, Mr. Robert Miller - Planetarium show. |
| July | Summer Observing Programmes. |
| August | Summer Observing Programmes. |
| September 14 | Observing reports, Mr. Paul Moffat - Colour Films of the African Solar Eclipse, ALPO AND AAVSO Convention Report - Mr. Del Stevens. |
| October 12 | Mr. Jim Gould - Handbook Discussion, Prof. Richard Bochonko - Comet Kohoutek - Brightest Comet of the Century?, Mr. Paul Moffat - slides of the Solar Eclipse in Africa, telescopes donated to the Centennial Observatory Fund by Mr. B. F. Shinn were auctioned off by Mr. Roy Belfield. |
| October 26 | Film - "The Crab Nebula", open discussion by audience. |
| November 9 | Mr. Paul Moffat - the Use of Setting Circles, Mr. Paul Churchland - The Nature of Time, Mr. B. F. Shinn - Plans for Centrascope '74 |
| November 23 | Mr. Don Hldiuk and Mr. Hans Thater - slide and audio presentation "Apollo 17 an End of an Era" Mr. Roy Belfield - Astrophotography and Instrumentation for the Serious Amateur, topics from the audience. |
| December 14 | Mr. Robert Miller - Radio Astronomy, election of Officers, Annual Reports of Chairmen. |

Lewis J. McQueen, *Secretary*

**THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
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(Alternate) – Herb Davis

GOLD MEDAL OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

The Gold Medal of the Society was established in 1905 as an encouragement to the study of astronomy. It is awarded to the graduating fourth year Arts & Science student who has both an A standing in his fourth year and the highest average mark in the two full courses and two half courses in astronomy which are contained in the Astronomy specialist programme, provided this average is over 80%.

If no student satisfies these criteria, the award is not made.

| | | |
|-------------------------|-----------------------------|-------------------------|
| 1906 – W. E. Harper | 1931 – W. S. Armstrong | 1962 – J. R. Percy |
| 1907 – R. M. Motherwell | 1933 – K. O. Wright | 1963 – P. H. Reynolds |
| 1909 – R. K. Young | 1935 – Miss F. S. Patterson | 1965 – A. F. I. Moffat |
| 1910 – R. J. McDiarmid | 1937 – D. A. MacRae | 1966 – W. A. Sherwood |
| 1911 – R. S. Sheppard | 1940 – W. F. M. Buscombe | 1967 – R. H. Chambers |
| 1913 – E. A. Hodgson | 1948 – R. W. Tanner | 1968 – R. Martin |
| 1914 – G. S. Campbell | 1949 – I. Halliday | 1970 – J. Kormendy |
| 1926 – F. S. Hogg | 1956 – D. C. Morton | 1971 – Blake F. Kinahan |
| 1929 – P. M. Millman | 1960 – C. R. Purton | 1972 – M. J. McCutcheon |
| | 1961 – R. C. Henry | |

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

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|--|--------------------------------|
| 1959 – E. J. A. Kennedy (Nat. Secretary) | 1962 – Jean Asselin (Montréal) |
| J. H. Horning (National Treasurer) | Robert J. Clark (Vancouver) |
| 1960 – Charles M. Good (Montréal) | *Jesse Ketchum (Toronto) |
| Miss F. Laforest (Montréal) | Joseph A. Pearce (Victoria) |
| Frederic L. Troyer (Toronto) | |
| 1961 – *Robert Peters (Victoria) | * Deceased |

- 1963 – Edwin E. Bridgen (Montreal)
Miss M. S. Burland (Ottawa)
A. Vibert Douglas (Kingston)
- 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)
- 1966 – P. Lemieux (Montréal)
*S. Litchinsky (Calgary)
W. J. McCallion (Hamilton)
W. A. Warren (Montreal)
- 1967 – H. S. Hogg (Toronto)
P. M. Millman (Ottawa)
*R. J. Northcott (Toronto)
*H. Simard (Montréal)
J. F. Wright (Calgary)
- 1968 – *D. R. P. Coats (Calgary and
Winnipeg)
George Ball (Victoria)
Herbert Fox (Hamilton)
- 1970 – Norman Green (Hamilton)
J. E. Kennedy (Saskatoon)
- 1971 – K. B. Meiklejohn (Calgary)
J. N. R. Scatliff (Winnipeg)
- 1972 – Vern Ramsay (Toronto)
B. F. Shinn (Winnipeg)
F. Schneider (Hamilton)
- *1973 – Fred P. Lossing (Ottawa)

*Deceased

It is with regret we record the decease of the following members in 1973:

- | | |
|-------------------------------------|--|
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| Dr. I. S. Bowen (US Hon) | Mr. Jesse Ketchum (Toronto) |
| Mr. B. Catterall (Van) | Mr. S. Litchinsky (Calgary) |
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| Dr. A. H. Joy (US Hon) | Mr. J. Walker (Victoria) |

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- | | |
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| Dr. Bart J. Bok (Australia) | Dr. Josif S. Shklovsky (U.S.S.R.) |
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*Deceased

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*Deceased

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| | | | |
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