

SUPPLEMENT TO

THE JOURNAL OF THE

ROYAL ASTRONOMICAL

SOCIETY OF CANADA



March 1962

REPORT OF THE PRESIDENT

Since I wrote the last presidential report four men, two Russians and two Americans, were placed in space for varying lengths of time during 1961. It is quite likely that, before you read this, additional "man-in-space" events will have taken place. This fact emphasizes once more the entry of space concepts into the daily lives of everyone. It is vital that all of us are adequately informed concerning the realm of space away from the immediate environment of the earth's surface. I suggest that each member of our Society should assume a certain responsibility for encouraging the spread of genuine space knowledge.

There is certainly a need for this. I have been surprised at the number of people I find who do not understand clearly the distinction between astronomy, the scientific study of the universe at large, and astrology, that pseudo-science which, without any scientific logic or experimental proof, pretends to predict future events by the configurations of the heavenly bodies at certain specified times. I think most of us feel that we live in an informed and educated community. And yet I am sure that the astrology columns in our newspapers far outnumber those on astronomy, while the astrological magazines on our news-stands are more numerous than astronomical periodicals.

I hope that the Royal Astronomical Society of Canada will continue to play its part in general educational activities within the community. In this connection our participation in the work of the Canadian Science Fairs Council gives us an opportunity to assist in the encouragement and guidance of the high school student interested in astronomy. It must also be remembered that education is the surest way to overcome superstition, prejudice and intolerance, and the act of learning should not stop when someone leaves school but should continue for the adult throughout life.

It is gratifying to realize the reputation for reliability and judgment that our National Society has achieved over half a century. This is evidenced by the trust placed in the Society by one of our former members, the late Walter J. Helm who, according to the terms of his will, has asked us to be the future administrators of considerable amounts of money to be devoted to astronomical research in Canada.

During the past year I have continued my policy of visiting the various Centres of the Society. This has, I hope, created a closer bond between the local groups in various cities and the national organization. By the time of the General Assembly in May 1962, I hope to have visited every Centre at least once during my term as President. I feel that the move to hold our General Assembly in western Canada this year is an important step in promoting common interests among our widely-spread members. The co-ordination of observations, sponsored by the standing committee on observing activities, is another step in this direction.

As we look forward to an expanding programme within the Society during the coming year I should like to express a personal word of thanks to all those who have worked so hard during the past year to further our common aims.

Peter M. Millman
National President.

REPORT OF THE NATIONAL SECRETARY

Meetings of the National Council were held on January 6, March 18, June 2, September 22, and December 1, with a special meeting on July 17. The Executive Committee met on February 9, May 1, June 27 and December 1. The Annual Meeting of the Society was held in Toronto on March 17-18 with the President, Dr. Peter M. Millman, as Chairman.

The membership of the Society at September 30, 1961, was 2,089 made up as follows.

CENTRES

Toronto	575	Calgary	50
Montreal	235	London	48
Ottawa	109	Windsor	46
Victoria	98	Edmonton	42
Quebec	98	Winnipeg	37
Hamilton	83	Halifax	30
C.F. de Montréal	61	Niagara Falls	28
Vancouver	54	Kingston	20

UNATTACHED

United States	302	Foreign	39
Canada	121	Honorary	13

The number of Life Members (included in the above) reached a total of 114. The 18 per cent. increase in Life Members during the year resulted from the diligent efforts of the Committee on Life Membership under the direction of Miss Miriam S. Burland. The objective of obtaining a nucleus of 100 Life Members was exceeded.

In June a new Centre was formed in Kingston, Ontario, bringing the number of Centres in the Society to sixteen. Dr. A. Vibert Douglas has been largely responsible for the growth and development of this group.

The Gold Medal of the Society was awarded to Mr. Richard C. Henry at a buffet supper prior to the June meeting of the National Council. A Service Award was granted to Mr. Robert Peters of the Victoria Centre. Mr. Morris Altman, who has served as our Auditor for many years, was granted an Honorary Life Membership. No award of the Chant Medal was made.

The award of a Membership Certificate was established and certificates were presented to Miss Ruth J. Northcott of the Toronto Centre and Miss Miriam S. Burland of the Ottawa Centre.

The Toronto Centre donated to the Society a new set of dies for the Service Award, which will be used for the first time in striking the Awards for presentation at the General Assembly in Edmonton in May 1962.

Substantial gifts from a number of Centres and members enabled the Trustees to retire the mortgage on the property at 252 College Street in March 1961. A further gift from the Toronto Centre has added to the value of this building. Repairs and redecoration have maintained the building in a satisfactory state with additional improvements planned.

In December the death of John Forrest Helm made available to the Society a portion of the capital bequest from the estate of the late Walter J. Helm. When this capital is transferred, the Walter J. Helm Endowment Fund will be established. The clear annual income from this Fund is to be used "by the said Society for the general purposes of the David Dunlap Observatory located in the vicinity of Richmond Hill, Ontario."

Dr. J. F. Heard was appointed to the Editorial Committee; no Assistant Editor has been selected following the resignation of Dr. Leonard T. Searle. A "Statement

of Policy of the Editorial Committee" was approved by National Council and is reproduced in this Supplement.

The pamphlet of the Society was revised and both English and French editions were printed. An insert of two pages in French was included in 500 copies of the 1962 OBSERVER'S HANDBOOK; this accomplishment resulted largely from the initiative of Miss F. Laforest, Centre Français de Montréal.

The observing activities of members and Centres have been organized under Mr. R. V. Ramsay of the Toronto Centre, as National Observing Chairman, assisted by a committee of three; eleven observing disciplines have been approved with co-ordinators appointed in five of these. Bulletins pertaining to the activities in some of these disciplines were issued.

The Royal Astronomical Society of Canada became the thirteenth sponsoring organization of the Canadian Science Fairs Council; it is expected that in this way encouragement in the study of astronomy can be given to students at the high school level.

At our Annual Meeting in March, the "McKellar Memorial Lecture" was delivered in honour of our late President, by Dr. Alex Douglas of N.R.C., Ottawa. The text of this address was published in the June JOURNAL.

Members of the Society were shocked by the tragic motor accident in July which claimed the lives of our National Treasurer, Dr. William R. Hossack, and his wife. "In the passing of Dr. Hossack, we have lost a man of keen judgment, an officer of exceptional ability, and a friend in the truest sense of the word." At a special meeting of Council, Dr. J. F. Heard was appointed Treasurer and Chairman of the Board of Trustees, while the vacancy on the Property Committee was filled by Dr. Helen S. Hogg.

The death of our Honorary President, Dr. W. J. Dunlop, is noted with regret and also the death of other members as shown below:

Sr Jose Lazaro Costa, Quebec Centre	John McLeish, Ottawa Centre
Chanoine G. O. Cote, Quebec Centre	Dr. E. R. Phelps, Windsor Centre
W. Darke, Vancouver Centre	Lawrence W. Prime, Toronto Centre
George A. Davis, Jr. (U.S.A.)	Chanoine H. Rioux (Life Member), Quebec Centre
A. S. Evans, Calgary Centre	Mrs. E. Smith, London Centre
J. William Ferrier, Quebec Centre	Miss M. E. Watterson, Winnipeg Centre
George W. Gray (U.S.A.)	Dr. Theo. R. Waugh, Montreal Centre
A. E. McGourty, Toronto Centre	J. E. KENNEDY, <i>National Secretary</i>

REPORT OF THE LIBRARIAN

A total of 353 books were circulated during 1961, \$38.57 was spent on new books and \$20 on binding the JOURNAL. The film "Universe" was obtained at a cost of \$59.48 and was loaned 8 times. An additional copy, belonging to the Toronto Centre, is on deposit at the Library. The "Chant 100" collection of slides has been on loan 8 times. Donations of books received during the year from Mr. Leonard Dodds, Mr. Wilfred Miller and Mr. Carl Reinhardt are gratefully acknowledged.

A portion of the Technical Library, on loan to the David Dunlap Observatory since its establishment has been sold to the University of Toronto for the use of the Observatory. This part of the Library consisted largely of older series of astronomical periodicals and other publications.

A committee is reorganizing the Library at 252 College Street; it is expected that the books will be catalogued in 1962 and the periodicals received better organized and more accessible.

LEONARD A. CHESTER, *Librarian.*

REPORT OF THE STANDING COMMITTEE
FOR OBSERVATIONAL ACTIVITIES

During its first year of activity, the Committee has been concerned with the details of organization, surveying the needs and desires of each Centre with respect to the various fields included in the National programme and establishing contacts for those fields in each Centre.

In September 1961, a bulletin was sent to all Centres informing them of our aims and outlining the fields which the programme covers. Of the eleven disciplines approved by the National Council, five have achieved ready status with the appointment of National Co-ordinators, whose responsibility, as the name suggests, is to integrate observations in each discipline on a national scale and to disseminate data and aid to all Centres participating in that field.

Several Co-ordinators have already issued one or more Bulletins, outlining their particular field and its possibilities for the amateur, and response to these indicate that perhaps fifty per cent. of all Centres in the Society will participate to some extent.

It is the hope of this Committee that every amateur observer will take advantage of the opportunity to share his observations with his fellows through the medium of this programme, and perhaps contribute in a small way to the advancement of astronomy.

ISABEL K. WILLIAMSON, E. MILTON, W. L. ORR, R. V. RAMSAY (Chairman).

Co-ordinators:

Lunar — R. THOMPSON, Box 79, Maple, Ont.

Planetary — G. CAHERTY, JR., 636 Sydenham St., Montreal 26, P.Q.

Aurora — E. MILTON, 9634 - 85th Street, Edmonton, Alta.

Artificial Satellites — E. ROGERS, 1507 - 22nd St., Calgary, Alta.

Comets and Novae — J. Low, 411 Brixton Ave., St. Lambert, P.Q.

REPORTS OF SECRETARIES OF CENTRES

CALGARY CENTRE

The Calgary Centre had a very profitable year. The Centre held its general meetings in its new home, the Science and Engineering Building of the University of Alberta, Calgary. The facilities for the general meetings, and informal discussions over coffee, proved very stimulating for the organization. We are indeed fortunate to have these facilities. Mr. S. Litchinsky kindly provided a central meeting place for the executive meetings.

Following is the programme of meetings, most of which were augmented by films on astronomy:

January 11—Students' Symposium: "The Planets"; Bruce Bohannon: "Jupiter"; Richard Choquette: "Mercury"; Keith Clayton: "Saturn"; David Litchinsky: "Mars"; Ross Staudinger: "Venus".

February 8—Miss M. I. Jackson: "Ancient Astronomy".

March 8—P. Glockner: "Recent Theories and Methods of Astronomy and Cosmology".

April 12—Brian Clark: "Recent Russian Sputnik".

May 10—J. Wright and R. Nelson: "Observations of Western Observatories".

September 13—Film: "Universe".

October 11—A. McQuarrie: "Meteorological Satellites".

November 8—K. Meiklejohn: "Astronomy Through the Ages".

December 13—Annual Dinner and Meeting.

The Centre held two star parties and was active in observing and moonwatch activities. We were favoured by the visit of Mr. Alexis A. Bakeeff, co-ordinator of the moonwatch programme at the Smithsonian Astrophysical Observatory.

(MRS.) K. B. MEIKLEJOHN, Secretary.

EDMONTON CENTRE

The regular meetings were held in the Queen Elizabeth II Planetarium in Coronation Park, through the kindness of the Parks Department of the City. Attendance varied from 16 to 52. Our monthly publication "Stardust" was sent to members and contained reports on matters of astronomical interest, news items and notices of meetings. The meetings were as follows:

January 12—F. Loehde: "Planetarium Presentation"; I. MacLennan: "Visit to Flagstaff Observatory".

February 9—D. MacPherson: "Evolution of Stars".

March 9—F. Jensen: "Mythology in Astronomy".

April 13—P. Glockner: "Recent Theories and Methods in Astronomy and Cosmology".

May 28—R. M. Petrie, Ph.D.; "Measurement of the Distance to the Sun".

October 12—Professor L. E. Gads: "Highlights of Trip to U.S.S.R."; Annual Banquet. November 9—Film presentation: "Universe".

December 14—G. L. Cumming, Ph.D.: "Age of the Solar System".

Star Nights held on May 19 and 20 and August 25 were well attended by the public. Echo I Satellite passed over during the show on May 20; the termination of a partial eclipse of the moon was observed by many on August 25 although clouds blotted out most of the eclipse. These projects resulted in a satisfactory financial return to the Centre.

A. STOCKWELL, *Secretary*.

HALIFAX CENTRE

Seven regular meetings of the Centre were held in 1961 in the Planetarium Room of the Nova Scotia Museum of Science except for the April meeting, which was held in the Auditorium of the National Film Board.

Instruction in astronomy was given to groups of Girl Guides and Boy Scouts during the year by B. W. Allen and J. McGuigan.

January 25—Business items were discussed and a film was shown.

February 22—Planetarium demonstrations; B. W. Allen: "The Clock in the Sky".

March 29—W. F. Take: "Use of the Observer's Handbook"; Film Presentation: "Trip to the Moon".

April 26—Film "Universe" was shown and discussed.

July 20—Public viewing session.

September 27—Business meeting; election of officers.

October 25—B. W. Allen: "Discussion and Study of the Observer's Handbook".

November 20—Peter M. Millman, Ph.D., National President: "The A.B.C. of Space Travel".

R. L. AIKENS, M.D., *Secretary*.

HAMILTON CENTRE

During the year 1961, seven regular meetings were held in the Physical Science Building, McMaster University, Hamilton. A trip to the David Dunlap Observatory at Richmond Hill, Ontario, was arranged, plus two Star Nights. These are our means of acquainting the public with the aims and work of the Society. Two Council meetings were required to discuss the business of the Centre. The total membership is 102, including three Life Members.

January 5—Peter M. Millman, Ph.D.: "Watchers of the Sky"; Film from the National Library: "The Earth in Motion".

February 2—Lorraine Neilson: "Life in Our Solar System"; Leslie Sheldon: "The Possibility of Life on Other Planets"; L. V. Powis: "The Laser".

March 2—J. A. Winger: "Mercury and Venus".

April 6—F. R. Letson: "Radio Astronomy"; T. M. Morton: "Griffith Planetarium",

"Mount Wilson Observatory" and "Hundred-Inch Telescope at Palomar"; S. J. Swannie: "Photography in Astronomy"; G. M. Vansickle: "Kitt Peak, Arizona".

May 4—Field trip to the David Dunlap Observatory, Richmond Hill, Ontario.

August 18, 19—Star Nights.

October 5—W. J. McCallion, M.A., Films from the National Academy of Science: "The Flaming Sky" and "Cosmic Rays".

November 2—G. M. Vansickle: "The Great Meteor Crater of Arizona"; E. Ostrosser: "Interesting Near-by Stellar Objects".

December 7—Ruth J. Northcott, M.A.: "Reports from the International Astronomical Union Meeting of August 1961, Berkeley, California". Slides were shown of Mount Wilson and Palomar Observatories.

GEORGE MURCHIE, *Secretary-Treasurer*.

KINGSTON CENTRE

In January, a group of interested students met with Dr. A. Vibert Douglas and Dr. G. A. Harrower of Queen's University to discuss the possibility of forming an astronomy club which would give them access to the instruments in the Queen's Observatory. Before the end of the spring term, an Executive had been elected and a Constitution drawn up. The application to form a Kingston Centre of the R.A.S.C. was approved by the National Council at its June meeting.

In September, meetings were organized on a bi-weekly basis. Programmes have included slides taken by Dr. Harrower of the Mount Wilson and Palomar Observatories, the film "Universe", two films from the Society's Library, and a discussion by Dr. Harrower on "Sidereal Time and the Use of the Telescope". Several meetings have included observing sessions.

More recently the following sections were organized: Lunar, Planet, Comets and Nova. During the winter, the Centre plans to complete a six-inch reflector for its own use.

There are approximately twenty active members in the Centre.

A. ROTHWELL, *Secretary*.

LONDON CENTRE

There were seven regular meetings during 1961. All meetings were held in the Hume Cronyn Memorial Observatory of the University of Western Ontario. Observations were made with the ten-inch refractor when weather permitted. The meetings were as follows:

January 20—H. R. Kingston, Ph.D.: "Right Ascension of the Meridian, Now"; W. H. Wehlau, Ph.D.: "Stellar Evolution".

February 17—H. R. Kingston, Ph. D.: "Right Ascension and Declination"; D. A. Scott, B.A., Officer-in-Charge of London Meteorological Office: "Constructing the Weather Map".

March 17—W. G. Graham: "Locating Celestial Bodies by Sidereal Time"; R. W. Nicholls, Ph.D.: "Space Explorations".

April 21—H. R. Kingston, Ph.D.: "Exploring the Zodiac, One-Way Traffic Lane of the Sky"; G. H. Reavely, M.A., D.I.C.: "Common Minerals in Meteorites".

May 20—Michael Hastings-Trew: "Astronomical Current Events"; Russel Warwick, B.A.: "Coast-to-Coast Kodachrome Tour" including cities having R.A.S.C. Centres; W. G. Graham: "Measuring Star Magnitudes by Means of a Photoelectric Photometer"; H. R. Kingston, Ph.D.: "Demonstration of an Astronomical Teaching Instrument". The London Centre was host to the members of the Windsor Centre at this meeting

October 20—John E. Rice: "The Motions of the Planets"; W. H. Wehlau, Ph.D.:

- "The Giant Planets Jupiter and Saturn, Closely Travelling Companions Through 1961".
- November 17—W. H. Adamson, M.A.: "Observer's Handbook"; Eric Brannen, Ph.D.: "Some Results of Relativity Theory".
- December 15—Annual Meeting with reports and election of officers followed by an illustrated lecture plus a social time with refreshments. R. J. Higgins: "A Journey to the Centre of the Earth".

The passing of Mrs. Ethel W. Smith early in 1961 is noted with deep regret; as a member of the Executive Committee of this Centre for many years, she contributed much to the Society.

I. E. MCKONE, *Secretary*.

MONTREAL CENTRE

Meetings have been held as follows during the year 1960-61 under review:

- October 20—Annual meeting of the Centre with presentation of reports, election of officers and Council, followed by film presentation and refreshments.
- November 10—Professor E. J. Stansbury, Physics Department, McGill University: "Some Applications of Solid State Instruments to Astronomy".
- December 8—A. M. Donnelly: "Making Your Own Telescope".
- January 12—Walter Hitschfeld, Ph.D., Physics Department, McGill University: "The Atmospheric Greenhouse".
- February 9—Professor D. L. Mordoll, Dean of Engineering, McGill University: "Escape".
- March 9—Through special arrangements, the prize-winning film "Universe" was shown.
- April 13—Donald A. MacRae, Ph.D., of the David Dunlap Observatory: "Radio Astronomy in Canada".
- May 11—Final meeting of the year with a review of the year's activities, followed by a social hour.

Through the courtesy of members residing outside the Metropolitan Area, groups have been able to make extended observations of meteors and other phenomena. The thanks of the Centre is extended to these members for the hospitality so generously shown.

"Star Night" was held on September 20, with the co-operation of the City of Westmount. There was an excellent turnout although the weather was not quite as favourable as the year before.

A beginners' course in astronomy was given last year and will be repeated this year.

W. J. CULLINAN, *Secretary*.

CENTRE FRANÇAIS DE MONTRÉAL

Le conseil du Centre français de Montréal s'est réuni quatre fois au cours de l'année, 1960-1961.

Il y eut huit réunions mensuelles au cours desquelles des conférences ont été présentées, soit par des invités, soit par des membres:

- 31 octobre—Assemblée générale — Election du conseil. Trois films furent présentés.
- 28 novembre—Jean Asselin, Ing.P.: "La vie et l'Univers".
- 19 décembre—Fleurange Laforest: "L'étoile de Béthléem".
- 23 janvier—Pierre Lemieux et Pierre O'Keefe: "Sera-ce un télescope ou une lunette?".
- 20 février—Vladimir Paschewiski, Ph.D.: "Commentaires sur les effets des radiations sur l'homme".
- 20 mars—Madame J. P. Jean: "Le côté invisible de la Lune".

24 avril—Gaston Lebrun: "Applications pratiques sur l'astronomie".

25 août—Eclipse partielle de Lune — Deux Stations furent organisées, une à Préville, Qué., chez M. Gerard Cloutier et une autre à Pierrefonds, Qué., chez Mlle Fleurange Laforest. La Lune n'a pas été visible durant la première partie de l'éclipse, mais durant la seconde partie plusieurs chronométrages furent faits aux deux entroits.

17 octobre—Soirée d'Astronomie populaire.

De plus, il y eut d'avril à novembre 1961 trente réunions hebdomadaires au Jardin Botanique. Ces réunions eurent lieu beau temps, mauvais temps. Lorsque la température le permettait il y eut observation du ciel; ces réunions furent précédées d'explications pratiques. L'assistance à ces réunions se chiffre à 548 personnes, soit une moyenne de 18.3 personnes par réunion.

Une section a été formé pour le polissage des miroirs. Des feuillets pratiques ont été distribués et le bulletin mensuel, inauguré il y a deux ans continue son travail de vulgarisation.

La soirée d'astronomie populaire a été un réel succès, avec une assistance d'au-delà de 1500 personnes.

Des visites et des causeries ont été faites dans différentes communautés religieuses, tant au cours de l'année qu'au cours des vacances.

FLEURANGE LAFOREST, *Secrétaire.*

CENTRE DE QUÉBEC

Deux événements d'importance ont marqué l'année 1961, à notre Centre. Ce fut d'abord, le 3 juin, la formation de la Fédération des Groupements Astronomiques du Québec. En acceptant de faire partie de cette association, les observatoires de Montmagny, de Pierreville et de Trois-Rivières se sont engagés à collaborer avec l'observatoire de Québec à l'exécution d'un programme conjoint d'astronomie populaire et de travaux méthodiques. Les observatoires de la Fédération bénéficient de l'aide technique et matérielle du Service d'Astronomie du gouvernement provincial, au même titre que celui de Québec. Pour l'instant, ces observatoires ne possèdent que le statut de succursales, mais deviendront autonomes quand des sociétés locales pourront en prendre charge.

Le second événement et non le moindre, puisqu'il était attendu depuis bientôt vingt ans, ce fut l'annonce faite, le 9 novembre, par monsieur le ministre des Affaires Culturelles que le gouvernement de la province s'engageait à doter la région métropolitaine de Québec d'un observatoire-planétarium. Rien de précis, cependant, n'a été révélé quant à la date de mise en chantier de la construction, ni au montant qui lui sera consacré. D'ailleurs, il faudra attendre quelque temps encore avant d'être fixé sur l'emplacement du futur observatoire.

Au chapitre des travaux pratiques exécutés à l'observatoire temporaire, il faut mentionner une série importante de relevés photographiques, de même que des tests de turbulence atmosphérique, pratiqués simultanément à l'observatoire de la tour Martello et au domaine de St-Télesphore, situé en banlieue, à quatre milles de distance à vol d'oiseau du centre de la ville. Ces tests ont révélé qu'en été et en automne, l'atmosphère est toujours plus stable à Québec même (parc des Champs de Bataille) que dans ce secteur de banlieue. Les tests donnent en même temps le coup de grâce à cette légende d'après laquelle le vent serait un facteur déterminant de turbulence: généralement, il faisait plus de vent à la tour Martello qu'au domaine de St-Télesphore.

Nous n'avons pas eu de réunion générale avec causerie au cours de l'année. Par contre, les membres étaient invités, chaque samedi soir, à l'observatoire, pour des observations au télescope, avec commentaires appropriés.

PAUL-H. NADEAU, *Le secrétaire.*

NIAGARA FALLS CENTRE

Eight regular meetings, three special meetings and five Star Nights, with an average attendance of 40, were held, all open to the public. During the summer, special Star Nights were held for the Girl Guides, Cubs and Scouts of the district.

The Telescope Makers Group has completed three 6-inch and one 8-inch reflectors, with several still to be finished. There are a total of 15 telescopes now among the membership of thirty-three. Meetings and subjects were as follows:

January 3—Peter M. Millman, Ph.D.: "The Watchers of the Sky".

January 17—General meeting; discussion on "Observing Disciplines".

February 17—R. R. Broadfoot: "The Amateur's Telescope".

February 21—Formation of a Telescope Makers Group and arranging a trip to visit the Telescope Makers Group of the Toronto Centre.

March 21—Film presentation: "The Story of Palomar".

April 18—H. Bacon: "Ye Shall Know the Truth"; A. Kindy: "This Changing Universe".

October 17—Annual Meeting; election of officers.

October 24—Annual Turkey Dinner, followed by preview of film "Universe"; attendance 46.

November 14—Film: "Universe"; 135 people were present.

November 21—A Kindy: "Education and Astronomy".

December 19—K. Hayes: "History of Astronomy".

R. G. NELSON, *Secretary*.

OTTAWA CENTRE

The Centre spent an active year in 1961 with a full schedule of monthly meetings, and acted as host for the annual spring meeting of the American Association of Variable Star Observers. Lectures and topics were as follows:

January 12—K. Whitham, Ph.D.: "East African Safari".

February 22—C. S. Beals, Ph.D.: "Fossil Meteorite Craters".

April 11—John Hampson, B.A., of CARDE: "Upper Atmosphere Chemistry".

April 26—Observers Group Night: W. L. Orr, M.D.: "Handbook Discussion"; D. Fisher: "Some Amateur Sun-spot Observations"; F. P. Lossing, Ph.D.: "Taking Pictures through an Amateur's Telescope"; W. E. Dey: "Three Ottawa Amateur Observatories".

May 26—M. G. Whillans, M.D., of D.R.B.: "Biosciences and Space Research".

October 26—Colin Low of The National Film Board: "Production of the Film Universe".

November 24—P. M. Millman, Ph.D.: "Visitors From Space".

December 14—Symposium of Space Travel: E. H. Dudgeon, M.Sc.: "Propulsion"; W. M. Cameron: "Navigation"; W. L. Orr, M.D.: "Biological Aspects".

The Observers Group had an interesting year continuing its regular programme of meetings on the first Saturday evening of each month. A display illustrating some of the work of the group was sent to the Annual Meeting in Toronto.

During the summer, members of the group provided telescopes for the public on Saturday evenings at the Dominion Observatory. The Boy Scouts National Jamboree was held in Ottawa in July and the Observers Group took part in the programme by organizing a star party at the Jamboree site at the request of the Scout Committee.

A. A. GRIFFIN, *Secretary*.

TORONTO CENTRE

The Toronto Centre held ten regular meetings during 1961; the Observers Group held nine lecture or discussion meetings, and the Telescope Makers Group met twenty times for instruction and workshop meetings. Eight "Sky-Gazing Parties" were ar-

ranged for the late spring and summer months and the usual telescope display was staged on evenings, when weather permitted, during the 15 days of the Canadian National Exhibition. One of the Sky-Gazing Parties in city parks was cancelled because of rain and three of the remaining seven were curtailed by the weather although astronomical films were shown. Attendance was estimated at well over 1,000 on each of the two best nights. Total attendance at the telescope display on 12 nights of operation at the C.N.E. was slightly over 7,000, about half of our better years.

The Observers Group made arrangements early in the year to meet in Hart House, thus making available the basement room at 252 College Street for more meetings of the Telescope Makers Group. This Group was in charge of arranging the exhibits for the Annual Meeting of the Society held in Toronto on March 17-18. Four observing meetings were held during the summer at the homes of members and the programme of the Centre's regular meeting on December 8 was presented. One issue of "Scope" was published in 1961. Mr. D. J. FitzGerald took over as Director succeeding Mr. R. Vernon Ramsay, upon the latter's appointment as National Observing Director of the Society.

The Telescope Makers Group held twenty sessions in the basement workshop and meeting room at 252 College Street. Several members completed reflectors of 6-inch and larger sizes, while many new members began construction of telescopes under the guidance of Mr. Jesse Ketchum and his assistants. Average attendance at these meetings was 24. Members of the Group brought their instruments to the Sky-Gazing Parties and undertook the work involved in the Exhibition display. Several members set up their telescopes each Saturday evening for the public at the David Dunlap Observatory between April and October.

Speakers and subjects at the Centre's regular meetings were:

- January 20—Annual meeting; film programme: "The Strange Case of the Cosmic Rays".
- February 10—Peter M. Millman, Ph.D., National President of the Society: "The Astronomical Heritage of England".
- February 24—Donald C. Morton, Ph.D., U.S. Naval Research Laboratory: "Rocket Observation of the Sun and Stars".
- April 14—Joint meeting with the Canadian Aeronautical Institute. Samuel Herrick, Ph.D., University of California: "Astro-Dynamics and Space Navigation".
- April 28—Members' Night. Demonstrations by members of Observers and Telescope Makers Groups.
- October 13—R. H. Garstang, Ph.D., Mill Hill Observatory, University of London, England: "The Gaseous Nebulae".
- October 27—Donald A. MacRae, Ph.D., University of Toronto: "The Lunar Landscape".
- November 10—N. W. Broten, B.Sc., National Research Council: "The Algonquin Radio Observatory".
- November 24—J. D. Fernie, Ph.D., University of Toronto: "The Story of Astronomy in South Africa".
- December 8—Members' Night. L. A. Chester, R. R. Thompson and R. V. Ramsay reviewed the history of Toronto Centre observing activities in planetary, lunar and Messier fields.

Lectures of the Observers Group included: R. V. Ramsay and D. J. FitzGerald: "Technique for Modelling Lunar Craters"; R. R. Thompson: "Some Lunar Problems"; L. A. Chester: "The Classification of the Stars"; P. W. Locke: "The Possibility of Life on Other Planets"; R. R. Thompson: "An Interview with Patrick Moore" plus "A Trip to Britain and Germany".

Among members of the Centre lost by death during the year were Dr. William

Ross Hossack, a Past President of the Centre and National Treasurer of the Society, Mr. Ambrose E. McCourty and Mr. Laurence W. Prime.

FREDERIC L. TROYER, *Secretary*.

VANCOUVER CENTRE

Among the seven regular meetings held by the Centre in the Physics Building of the University of British Columbia were:

March 14—F. A. Kaempffer, Ph.D.: "Why is it Dark at Night?"

April 11—Members' Night — M. H. Parry: "Glass"; T. Taylor: "Observations with a Small Telescope"; S. H. Riddell: "Radio Astronomy"; G. A. Morgan: "Some Pseudo Paradoxes in Astronomy"; H. J. McLatchy: "Putting the Brake on the Planets".

October 10—J. A. Jacobs, Ph.D.: "Auroras, Van Allen Radiation and Project Argus".

November 14—V. J. Okulitch, Ph.D.: "Telescopes".

December 5—F. K. Bowers: "Project West Ford — Why Put Needles In Space?"

Summer activity was at a minimum due to new construction on the Campus. The Annual Dinner was held in the Brock Hall on December 5.

NORMAN BARTON, *Secretary*.

VICTORIA CENTRE

The regular meetings of the Victoria Centre were held at Victoria College through the kindness of the College authorities. A total of seven regular monthly meetings were held in 1961; the Council met on several occasions to plan the programme and to discuss the business of the Centre. Speakers and topics at the monthly meetings included:

January 11—J. A. Pearce, Ph.D.: "Hipparchus — Greatest Astronomer of History".

February 8—Norman G. Rogers: "The Surface Features of the Moon".

March 8—Sir Charles Wright, M.A. (Cantab.), K.C.B., O.B.E.: "Geophysics".

April 12—D. C. Wyatt: "Telescope Optics".

October 11—G. J. Odgers, Ph.D.: "Observatories in Russia".

November 8—M. Plavec, Ph.D.: "Astronomy in Czechoslovakia".

December 6—Annual Dinner; Film presentation: "Universe".

Membership of this Centre for 1961 consisted of one Honorary Life Member, nine Life Members, twenty-six student members and sixty-three regular members, making a total of ninety-nine active members. Forty-four people registered for the successful "Summer Evenings with the Stars" series of lectures.

AL ANDERSEN, *Secretary*.

WINDSOR CENTRE

During the year 1961, nine regular meetings and two Executive meetings were held. The average attendance at these meetings was 35. This is a listing of the regular meetings:

January 17—C. Hallam, C.D., B.A.: Two films — "Naval Photography in Science" and "Rockets and Satellites"; B. Huneault: "Current Events".

February 21—C. Hallam, C.D., B.A.: Film — "Universe"; M. H. True: "Current Events"; J. Meredith: Educational talk: "The Sun".

March 21—This meeting was held at Assumption University. D. Rankin, Ph.D.: "Communications With Other Planets"; M. L. Dalpe: "Current Events"; J. Holden: Educational talk: "Mercury".

- April 20—Rev. W. E. Cole: "From Galaxies to Man"; D. Bawtenheimer: "Current Events"; L. Huneault: Educational talk: "Venus".
- May 20—This meeting was held at the University of Western Ontario as a joint meeting of the Windsor and London Centres. R. Warwick, B.A.: "Astronomical Centres and Observatories from Coast to Coast in Canada"; E. Lung: "Equipment Used in Photoelectric Photography".
- June 20—Viewing the stars through members' telescopes at Poplar Lodge, site of D. C. Bawtenheimer's Observatory; Film: "The Big Bounce", courtesy of Mr. Hughson of The Bell Telephone Co.
- September 19—This meeting was held at the Baby House Museum. R. A. Douglas, Curator: "Old Architecture of French and British Homes, 1780-1840"; D. C. Bawtenheimer: "Current Events".
- October 17—This meeting was held at the Jewish Community Centre. Peter M. Millman, Ph.D., National President: "The Astronomical Heritage of England"; M. H. True: "Current Events".
- November 21—Presentation of reports for the year and election of officers. L. Dalpe: "Current Events"; J. Conrad: Educational talk: "Earth".
- HUGH S. CUNNINGHAM, *Secretary*.

WINNIPEG CENTRE

Eight regular meetings were held during the year. Meeting halls were provided through the kindness of the University of Manitoba, Brooke Bond Canada Ltd. and Shinn Conservatory of Music. The speakers and topics were:

- January 25—Annual Meeting; R. J. Lockhart, B.A., F.R.A.S., F.B.I.S.: "Introducing the Universe".
- February 27—John Stewart: "Introduction to the Constellations"; Film: "The Moon".
- March 20—J. Scatliff, M.D., B.S.: "Visit to Dominion Observatory, Ottawa"; Isabel Christie: "Introducing the Planets"; Film: "Space, Science and Time".
- April 24—W. W. Wright: "Introducing the Sun"; Film: "Earth in Motion".
- May 15—J. Scatliff, M.D., B.S.: "Introducing the Comets and Meteorites"; Jack Newton: "Method for Adapting a Camera for Astrophotographic Work".
- September 26—A. Malowanchuk: "Satellites".
- October 24—Film: "Universe".
- November 28—B. F. Shinn, L.R.A.M., L.L.C.M.: "Spectroscopic Work on Variable Stars".

During 1961 three observation nights and five Council meetings were held. Various telescopes were demonstrated throughout the year: the Centre's three-inch and four-inch refractors, a six-inch reflector; Frank Shinn demonstrated his six-inch refractor telescope and mount, which he built; John Mohler, his three-inch Polarex refractor and mount.

A luncheon was arranged by the Council on the occasion of the visit by Mr. Alexis C. Bakeeff of the Smithsonian Institution. Dr. Scatliff began a 14-session series of talks on "Popular Astronomy" at the University of Manitoba Evening Institute. This autumn the Winnipeg Centre officially became one of the Moonwatch Satellite Tracking Stations.

ISABEL CHRISTIE, *Recorder*.

STATEMENT OF POLICY OF THE EDITORIAL COMMITTEE

The Society renders valuable service to astronomy by publishing an international journal and, in so doing, has assumed certain responsibilities. Our JOURNAL represents to the world astronomical activity in Canada. Indeed it is for this reason, primarily, that the Government of Canada makes a substantial annual grant to the Society and that the Dominion Observatories and the Universities effectively subsidize the publication. Therefore, we must make sure that the JOURNAL continues its long tradition of publishing astronomical discoveries and original researches. The JOURNAL, furthermore, must be of value to the non-professional member who is not concerned with the technical details of research but wishes to be informed on astronomical progress and activity. The two aims can be achieved only by a careful selection of the material to be published.

To accomplish the above aims, a policy was adopted when the JOURNAL was founded and this policy has been followed by the Editors. The present Editorial Committee feels that a statement of general policy will be of interest and value to all members and this is set forth in the following paragraphs.

1. Material submitted for publication is accepted subject to the approval of the Editor in consultation with the Committee. In cases of doubt the Editor is empowered to have a paper refereed by an expert in the subject. Standards of printing, illustrations, and style, of an international journal impose certain limitations which may require the author to agree to revisions.
2. Subject to the conditions in (1) above, the following types of papers will be acceptable:
 - (a) Research papers in astronomy and closely related topics. Such papers should place the emphasis upon methods and results and, as far as possible, should exclude long tabulations of measurements and extensive calculations;
 - (b) Non-technical articles and reviews of astronomical progress. These should be authoritative, of general appeal and contain a minimum of highly-specialized material;
 - (c) Brief reports of original observations and new scientific projects undertaken by members.
3. The Committee welcomes the submission by all members, professional and non-professional alike, of material of the kind described in the above paragraphs.

All such articles will be considered carefully by the Editor and the Committee, for publication in the JOURNAL. In making the selection and in encouraging submission of articles they will make every reasonable effort to achieve the two aims referred to earlier. The Committee considers that the Editor can continue to produce issues of high standard and general appeal only with the support and participation of the members of the Society.

THE ROYAL ASTRONOMICAL

BALANCE SHEET

ASSETS

CURRENT ASSETS

Cash on hand and in bank	..	..	..	\$ 4,765.48	
Accounts receivable	..	..	..	2,758.40	
Prepaid expenses and deferred charges	..			<u>703.46</u>	\$ 8,227.34

FIXED ASSETS

Land, 252 College Street — at cost	..	..		\$17,000.00	
Building, 252 College Street — at cost	..	..	\$16,500.00		
<i>Less: Accumulated depreciation</i>	..	..	<u>2,062.50</u>	14,437.50	
Furniture and equipment	..	..	\$ 3,033.50		
<i>Less: Accumulated depreciation</i>	..	..	<u>1,419.68</u>	1,613.82	
Library — Nominal value	..	..		<u>100.00</u>	33,151.32
					<u>\$41,378.66</u>

AUDITORS' REPORT

We have examined the balance sheet of The Royal Astronomical Society of Canada as at December 31, 1961 and the statements of income and expenditure and surplus for the year ended on that date. In connection therewith we made a general review of the accounting methods and, without performing a detailed audit of the transactions, examined and tested the accounting records of the Society.

Toronto, Canada,
February 5, 1962.

APPROVED ON BEHALF OF THE NATIONAL COUNCIL:

J. F. Heard, *National Treasurer*
J. E. Kennedy, *National Secretary*

OCIETY OF CANADA

CEMBER 31, 1961

LIABILITIES AND EQUITY

CURRENT LIABILITIES

Outstanding cheques	\$ 116.61	
Accounts payable and accrued charges	<u>1,256.38</u>	\$ 1,372.99

DEFERRED INCOME

Membership fees for year ending September 30, 1962 ..	\$ 2,475.71	
Prepaid subscriptions to Journal and Observer's Handbook	3,032.82	
Prepaid advertising for 1962 publications	<u>1,335.00</u>	6,843.53
TOTAL LIABILITIES		<u><u>\$8,216.52</u></u>

EQUITIES

Surplus — as per statement attached	\$30,135.66	
Life Membership Reserve — as per statement attached ..	<u>3,026.48</u>	33,162.14
		<u><u>\$41,378.66</u></u>

TO MEMBERS

In our opinion, based upon our examination and the information and explanations given to us, the above balance sheet and related statements of income and expenditure and surplus present fairly the financial position of The Royal Astronomical Society of Canada at December 31, 1961 and the results of its operations for the year ended on that date.

MORRIS ALTMAN AND COMPANY
Certified Public Accountants

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
STATEMENT OF INCOME AND EXPENDITURE
FOR YEAR ENDED DECEMBER 31, 1961

O P E R A T I N G A C C O U N T

I N C O M E

Membership Fees			
R.A.S.C. Centres	\$ 4,625.16		
Individual members	1,872.50		
Life membership reserve — Annual appropriation ..	<u>191.02</u>	\$ 6,688.68	
Grants and Donations			
Government of Canada	\$ 3,500.00		
Province of Ontario	1,000.00		
Members' donations	<u>33.00</u>	4,533.00	
Publications (Sales and Subscriptions)			
Journal of the R.A.S.C.	\$ 1,620.50		
Observer's Handbook	6,484.32		
Special issues and reprints	<u>1,101.40</u>		
	\$ 9,206.22		
Less: Agents' discounts	<u>1,082.10</u>	8,124.12	
Advertising Revenue		1,875.00	
Proceeds from sale of Insignia		110.00	
Interest earned		<u>28.12</u>	
GROSS INCOME			<u>\$21,358.92</u>

E X P E N D I T U R E

Printing of publications	\$12,763.21	
Office salaries	4,420.00	
Stationery, printing and office supplies	1,392.99	
Rental allowance for Society's office	600.00	
Postage and express (less amounts charged)	612.17	
Contributions to centres	250.00	
Insignia and lapel buttons	248.70	
General expenses	284.67	
Library expenses	183.33	
Telephone	161.78	
Travelling expenses	100.00	
Employees' pension fund expense	382.96	
Bank charges and interest	25.60	
Depreciation on furniture and equipment	<u>303.36</u>	
TOTAL EXPENDITURE		<u>21,728.77</u>
O P E R A T I N G D E F I C I T F O R Y E A R		<u>\$ 369.85</u>

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
STATEMENT OF BUILDING INCOME AND EXPENDITURE
FOR YEAR ENDED DECEMBER 31, 1961

INCOME

Rents received	\$ 2,804.00	
Rental allowance for Society's office	600.00	\$ 3,404.00

EXPENDITURE

Taxes	\$ 572.41	
Mortgage interest	75.50	
Fuel	284.25	
Light, gas and water	186.14	
Property maintenance and repairs	325.74	
Insurance	69.01	
Depreciation on building	412.50	1,925.55
NET BUILDING INCOME		<u>\$ 1,478.45</u>

STATEMENT OF SURPLUS

Balance at December 31, 1960		\$25,936.62
Less: Operating deficit for year 1961		369.85
		<u>\$25,566.77</u>
Add: Net building income for year 1961	\$ 1,478.45	
Proceeds from transfer of Observa- tory Library to University of Toronto	2,000.00	
Donations to Mortgage Repayment Fund	910.00	
Gain from sale of securities	180.44	4,568.89
Surplus - December 31, 1961		<u>\$30,135.66</u>

STATEMENT OF LIFE MEMBERSHIP RESERVE

Balance at December 31, 1960		\$ 1,867.50
Add: Life membership fees received during 1961		1,350.00
		<u>\$ 3,217.50</u>
Less: Appropriation to General Account for year ended December 31, 1961		191.02
Balance at December 31, 1961		<u>\$ 3,026.48</u>

REPORTS OF THE

RECEIPTS	Calgary	Edmonton	Halifax	Hamilton	Kingston	London	Montreal
Balance from 1960	\$ 177.03	\$107.88	\$157.51	\$ 465.12		\$113.60	\$ 62.10
Membership Fees	235.00	197.00	110.00	412.00	\$ 43.50	180.00	1,071.00
Donations	2,015.00			12.50		10.00	
Cont. to Centre	8.00						
Educ. Activities		583.75		138.45			
Annual Dinner							
Sales of							
Handbooks, etc.	3.00	33.00		17.20		4.00	
Bank Interest		3.38		10.51		2.88	
Income from							
Investments	56.41						
Loans							
Life Member Grant	4.00			7.50			
Miscellaneous		1.00		35.00	44.70		
Total	\$2,498.44	\$926.01	\$267.51	\$1,098.28	\$ 88.20	\$310.48	\$2,530.91

DISBURSEMENTS

Fees remitted to N.O.	\$ 231.67	\$167.00	\$74.32	\$ 200.15	\$28.00	\$120.00	\$ 71.00
Donations remitted to N.O.						10.00	
Meetings				146.32	6.59	21.00	190.00
Annual Dinner		4.50					
Handbooks, etc.						2.67	
Equipment and Supplies	252.65	18.40		30.00			34.00
Office and Admin.	30.00	38.75	4.66	61.47	.30	10.86	117.00
General Expenses	44.10	321.70		69.91		7.50	300.00
Transferred to Special Funds	1,500.00						250.00
Observers Group							
Balance carried to 1962	440.02	375.66	188.53	590.43	53.31	137.85	6.10
Total	\$2,498.44	\$926.01	\$267.51	\$1,098.28	\$ 88.20	\$310.48	\$2,530.91

TORONTO CENTRE SPECIAL PURPOSE FUND

RECEIPTS	DISBURSEMENTS
Balance from 1960 \$1,919.85	
Annual Grant from C.N.E. 200.00	
Bank Interest 121.77	Balance December 31, 1961 <u>\$2,241.62</u>
<u>\$2,241.62</u>	<u>\$2,241.62</u>

CENTRES

	Montreal	Falls	Ottawa	Québec	Toronto	Vancouver	Victoria	Windsor	Winnipeg
\$48	\$ 96.04	\$ 429.94	\$ 80.52	\$1,844.81	\$491.48	\$1,470.41	\$139.38	\$153.22	
\$500	127.50	480.00	395.30	1,913.50	208.00	374.50	204.00	191.00	
\$900	13.00	45.00				1.25			
							44.00		
		146.00					137.25		
	17.00	74.00			2.00	18.00			10.00
\$55	1.70	10.39	1.69		10.55	45.88	3.93		
			1,359.99						
	50.00	27.50		51.00	10.00				2.50
\$701	\$305.24	\$1,212.83	\$1,837.50	\$3,809.31	\$722.03	\$2,107.54	\$347.31	\$356.72	

\$47	\$ 89.00	\$ 320.00	\$ 265.33	\$1,300.67	\$138.66	\$ 272.01	\$146.00	\$190.33	
\$100		100.00		655.67		30.00	25.00		
\$35	24.33			147.30	25.55	25.24	26.00	4.25	
		139.00			27.04	182.72			
	32.00	58.40			2.17	19.40			
\$7.52		60.75	662.40		17.78	50.55		24.65	
\$397	32.07	65.77	522.36	175.60	4.11	62.08	15.80	34.03	
\$025	37.84	44.88	340.23		15.93	27.68	18.22		
				145.41					
\$5	89.98	424.03	47.18	1,384.66	490.79	1,437.86	116.29	103.46	
\$701	\$305.24	\$1,212.83	\$1,837.50	\$3,809.31	\$722.03	\$2,107.54	\$347.31	\$356.72	

MONTREAL CENTRE OBSERVATORY FUND

Statement of Receipts and Expenditures for the Year Ending September 30, 1961

RECEIPTS		DISBURSEMENTS	
Balance from 1960 — Cash	\$ 877.02	Sundry Repairs	\$ 34.52
— Bonds	100.00	Repairs to Equipment	33.95
Transfer from General Fund	250.00	Equipment Purchased	537.30
Bank Interest	11.64	(Radio Receiver and	
Bond Interest	3.00	Transmitter with	
		Accessories)	
		Balance carried forward	
		Cash — \$535.89	
		Bonds — 100.00	635.89
	<u>\$1,241.66</u>		<u>\$1,241.66</u>

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
OFFICERS AND COUNCIL OF THE CENTRES FOR 1962

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