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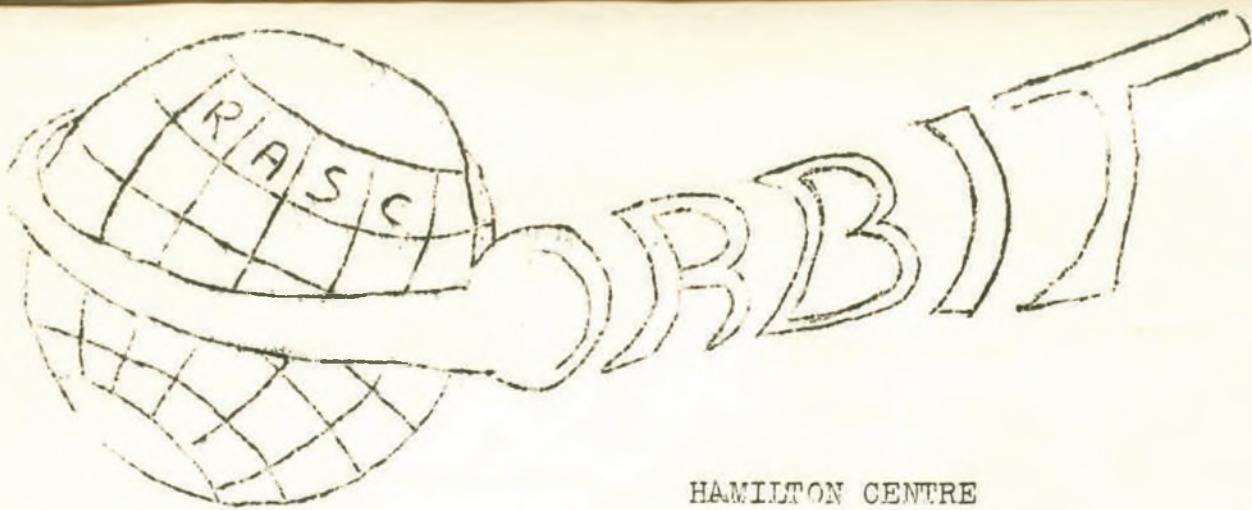
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HAMILTON CENTRE

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January 1969 - Royal Astronomical Society of Canada - Special Issue  
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On January 15, 1909, the Hamilton Centre of the Royal Astronomical Society of Canada officially came into existence. To commemorate this event, the Council of the Hamilton Centre felt that an expanded version of our quarterly newsletter, ORBIT would be appropriate. Your Editor was most delighted to undertake this task, and you are holding the result in your hands at this moment.

Producing this issue in just 8 weeks was quite an undertaking but each member of the Centre who was asked to write a chapter cooperated magnificently. The names of those who contributed are written in the table of contents. The Editor wishes to thank all of those who contributed and those who helped with the printing and binding. This issue is a team effort and all who worked on it have my hearty thanks and appreciation.

K.E. Chilton  
Editor

*Lord Theale*

*K.E. Chilton*

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## R.A.S.C. TIME CAPSULE

(The Story of the R.A.S.C. --- Our Parent Organization)

December 1st, 1868- a significant date for astronomers in Canada. It was then that a few men of various backgrounds met together to form the Toronto Astronomical Club. The first regular meeting was held on January 5th, 1869, and from this humble beginning there has sprung into vigorous growth, the Royal Astronomical Society of Canada which unites amateurs and professionals who are interested in things astronomical.

Urania, the Muse of Astronomy, did not always hold the keen interest of her followers, but the infant 19th century Astronomical Club struggled through periods of apathy and waning membership, yet continued to meet more or less regularly until the dawn of a more auspicious day.

In 1890, on March 10th, the incorporation was approved of the newly formed "Astronomical and Physical Society of Toronto", but within a few months the name was changed to "The Toronto Astronomical Society". A short two years later a further change took place when application was made through the Governor General to the King for permission to use the word "Royal". Thus, since March 3rd, 1903, the corporate title has been "The Royal Astronomical Society of Canada".

From the turn of the century and continuing for nigh on 60 years, the influence of Dr. C.A. Chant was felt in every phase of the Society's history. For many years, his was the guiding hand behind the two major publications of the Society, the Journal, and the Handbook, and it was Dr. Chant who first proposed that branches of the Society be established in other cities. As a result of this suggestion, Centres were soon begun in Ottawa, Peterborough, Hamilton, Guelph, Regina and Winnipeg.

Today, the Royal Astronomical Society of Canada stretches "from sea to sea", encompassing a membership of approximately 2,470 and uniting 16 Centres under a common bond inherent in the Society's motto "Quae Ducit Urania".

Norman Green

## HISTORY OF THE LOCAL ASTRONOMICAL SOCIETY--HAMILTON

by H.B.Fox

In considering the history of Astronomy in Hamilton, a convenient way would be to subdivide it as an historian of humanity in general would. So, we will look at it from the following categories:

PREDAWN: Of course, this is an exaggeration and simply refers to the period prior to our recorded activities. There must have been activity of some sort because Hamilton was known as a scientific town. A number of inventions are credited to Hamiltonians--the first long distance power transmission was from here, a camera obscura was built on the escarpment and we have the record of the private observatory on Aberdeen Avenue. A number of individuals must have owned telescopes of various types.

This is the limit of my ability to comment on this period but there may be some recordings by local historians.

EARLY: What we do have a record of is the first meeting of the Hamilton Astronomical Society which took place on Dec. 20, 1901, at the home of Dr. D. B. Marsh on Aberdeen Avenue. Thirteen were present including a number of Hamilton notables. Dr. Marsh was appointed Chairman and Adam Brown, honorary president.

Interest at this point was keen enough to have meetings bi-weekly.

Toronto, at this time, had an astronomical society and an invitation was received from them to attend a lecture by Professor J. A. Brashear.

In February 1902, the Hamilton Astronomical Society became affiliated with the Hamilton Scientific Association and the attendance at meetings grew.

At one meeting a 3" telescope of special design was presented to Captain J. E. Bernier for use on his Polar Expedition. This instrument was covered with fine leather for use in low temperatures. This was ceremoniously returned to the local group at a meeting on October 27, 1908, when Captain Bernier gave an account of his travels. This fine instrument is still used by the present society.

Probably the most outstanding meeting from an attendance viewpoint was that of February 8, 1905, when Professor Warner, FRAS, addressed a meeting of approximately 1,000 on the future site of the Panama Canal.

All during this interval, the inspired leadership of Dr. Marsh was evident. Sometime after 1905 he had a call to a Peterborough charge and he left the area for some time. His organizational work and drive left a viable society which continued in good health until the middle war years.

On January 15, 1929 a move of great significance was made and that was the affiliation of the local group with the Royal Astronomical Society of Canada,

This, the 60th anniversary of that event, is what we are commemorating and is also the reason for this sketchy recording of the history of the local Centre.



LIMBO: As a result of the First World War, transportation and involvement of people in so many war activities caused the local society to decline to the point of total eclipse and in April 1916, was disbanded.

It was not a demise but a hibernation until conditions improved. This was not to come for ten years.

MODERN: Dr. Marsh returned to the area and shortly thereafter, in 1926, with the help of his son, John, the local Centre was revived. He was a mechanical and optical craftsman and among his creations were two 5" refractors with circles and drives. One of these was purchased by Walter T. Geddard and was used for a number of Annual Field Nights at Mr. Geddard's home.

This instrument was subsequently mounted on the roof of McMaster University for a number of years until a misfortune due to a storm put it out of commission. It is now in the custody of our Telescope Makers' Group for a re-build.

With the return of Dr. Marsh, activities grew apace and in 1932 a very successful eclipse expedition was made to Actonvale, P.Q.. Due to a freak of cloud formation, this group was the only one successful in taking photos of the eclipse and these were published throughout the world. (Editor's note: Some of these are still in the Society's possession.)

Membership grew, although the lean depression years were felt. At times, the treasury was empty. Expenses for out-of-town visitors were meager and local resources used more. McMaster faculty, some of whom were members, gave good support. The war years followed but not with the fatal impact of the previous war.

Following the war, money became a little more plentiful and our treasury, augmented by some very good Field Nights, became a little flush.

Truman Norton, who was our chairman in 1948, became aware of a modestly priced planetarium. As a result of his urging, a group went to the Buffalo Museum of Science for a demonstration in 1949. It was decided to buy the basic instrument. A little later, the accessories were bought and Mr. Geddard offered to make up any deficit. This culminated in a meeting on November 5, 1949, at Convocation Hall at McMaster where the planetarium was formally donated to McMaster University and was accepted by Chancellor Gilmeur. This meeting was largely attended and gave great impetus to the local group. This instrument was at first mounted under an Air Force parachute but later under the present dome. It was used so extensively that it wore out and was replaced by the present one.

A following highlight was the first Annual Meeting of the National RASC held outside Toronto. This was on March 28, 1958 when dinner was enjoyed at the Refectory, followed by the meeting in the Mills Memorial Auditorium. The speaker of the evening was Dr. Helen Hogg who spoke on her favourite subject, Globular Clusters.

The most recent event was the Eclipse Expedition of 1963. Most of the present members will be acquainted with this as a result of the good photographic record made and which many have seen.

The interests of the group have become broader and more sophisticated. We have many sub-groups as a result of this, such as the well established Telescope Makers' Group, various observing groups, radio astronomy, astrophotography, junior group and discussion group. The executive members of recent years have been very aggressive and as a result, the local group is very strong and shows deep interest.

They are to be commended.

Footnote: As a footnote to the above, it may be pointed out that people interested in astronomy come from varied backgrounds and vocations.

Professor Brashear (1840-1920) was apprenticed at age 16 to the pattern-making trade. Then he became a machinist and engineer. His hobby was grinding and silvering telescope mirrors and lenses. He began constructing astronomical instruments in 1870. He became, in turn, Acting Director of Alleghany Observatory and Chancellor of Western University of Pennsylvania.

This same variety of interests and vocations is quite apparent in our present organization.

H.B.Fcx



HAMILTON ASTRONOMICAL SOCIETY.....Dec 20, 1901

HAMILTON SCIENTIFIC ASSOCIATION, ASTRONOMY SECTION. Feb. 18, 1902

ROYAL ASTRONOMICAL SOCIETY OF CANADA \*HAMILTON CENTRE\*

Jan. 15, 1909

by R. Lang

A man travelled the darkness, bearing a light  
And all who saw it, gathered round, the night.  
He lighted Astronomy, both near and far,  
And taught God's pathways amongst the stars.

The man who carried this astronomical torch was the Rev. Dr. D. B. Marsh, Ph.D., Sc.D., FRAS. His timely wisdom foresaw the possibilities that Hamilton with its large population, could, one day, become one of the astronomical centres of the world. Through the devoted efforts of Dr. Marsh and his wife and later, their son, organized astronomy in Hamilton was born.

Perhaps, if space permitted, a complete early history of the Centre would be written but, what I really want to write about is the circumstances surrounding the date of January 15, 1909. A hard core nucleus of serious-minded men really did pursue with a fervor that amateur astronomers have seldom seen since.

Although the recordings of the proceedings are scarce the change over to the RASC is quite clear. I would also like to add here that there were ladies who were just as serious about astronomy as the men.

First, I would like to present you with the minutes where the transition started. At that time Dr. Marsh was no longer living in Hamilton. He was called to Peterborough and G. Parry Jenkins, FRAS was President of the Hamilton Astronomical Society. Herewith are the minutes of Dec. 15, 1908:

#### THE HAMILTON ASTRONOMICAL SOCIETY- Hamilton Dec. 15, 1908

A meeting of the Hamilton Astronomical Society, called by the executive, was held this evening in the museum, the President in the chair. There was a large attendance, the room being nearly filled. The minutes of the previous meeting were read and adopted, the President taking advantage of the opportunity to tender to Rev. Dr. Marsh the vote of thanks which had been passed at that meeting.

Dr. Marsh was then called upon to explain the organization and objects of the Royal Astronomical Society of Canada. This he did, strongly urging the members of the Hamilton Astronomical Society to abandon their charter and apply for membership in the Canadian Society.

A list of eighteen names was presented of ladies and gentlemen who had agreed to apply for membership and to this was added the names of nearly all, if not all, of the members of the Hamilton Astronomical Society, present, making thirty five names in all.

After a general discussion it was moved by Mr.C.G.Milne and seconded by Mr.T.F.Wingham that if permission could be obtained to form a centre of the Royal Astronomical Society in Hamilton, that the Hamilton Astronomical Society surrender its charter and merge with the new organization. Carried unanimously. The President then appointed Rev.Dr. Marsh and Rev.Father Brady to act as delegates to the executive committee of the Royal Astronomical Society to make the necessary arrangements for the forming of a Hamilton Centre.

The following officers were then elected with the understanding that they were to be the officers of the new Centre when organized.

President	G.Parry Jenkins, FRAS
Vice-President	William Bruce
Secretary	E.H.Darling, A.M.Can.Soc.C.E.
Treasurer	A.T.Neill
Council	J.J.Ewal & T.H.Wingham

The Rev.Dr.D.B.Marsh then gave his illustrated lecture on the "Phenomena of the Lunar Surface" and a motion of Mr.J.J.Ewal and seconded by Mr.A.T.Neill tendered to Dr. Marsh a hearty vote of thanks. The meeting then adjourned.

Signed, E.H.Darling, Sec.

Approved-Jan.15th,1909 Signed G.Parry Jenkins

MEMORANDUM OF COUNCIL MEETING Dec.21st,1908

Meeting held at the residence of the Secretary, 21 Stanley Ave. Those present were Mr.Jenkins, Mr.Ewal, Mr.Wingham, and the Secretary.

The Secretary was instructed to procure the necessary minute book, stationery, etc. for the work of the Society.

It was decided to send out 500 circulars explaining the new organization of the Society and also publish this in the local press.

The question of obtaining the support of the Hamilton papers was left with the President.

It was decided to ask Mr.Ernest Morgan to act as reporter for the Society.

The President was asked to make arrangements with Dr. Chant to give a lecture at the first general meeting of the Society-date to be decided on later.

Signed...Parry Jenkins

The next entry in the minute book is the actual first meeting of the Hamilton Centre of the RASC. From what I can gather so far, and this is a vague estimate, there were at that time 56 members registered with the new Hamilton Centre.

Here then, are the minutes of that first meeting:



THE ROYAL ASTRONOMICAL SOCIETY OF CANADA HAMILTON CENTRE  
January 15, 1909

The first meeting of the Society under its new organization was held this evening in the museum, President G. Parry Jenkins in the chair. Number present, about ninety.

Minutes of the last meeting of the Hamilton Astronomical Society were read and adopted. A verbal report was given by the Secretary of the details of organization of the new society.

The Vice-President, Mr. William Bruce, invited the members to visit his observatory at any time.

The following applications for membership were received:

Andrew Alexander  
George Rutherford  
Charles A. Herald  
Rev. F. E. Howitt  
R. A. Ptolemy  
Calvin Davis  
J. E. Wodell  
J. L. Lewis  
J. R. Scott  
R. B. Sheridan  
J. K. Fenton

Matthew Warner  
E. P. Moore  
R. S. G. Peusan  
K. Bethune  
H. H. Champ  
G. L. Drew  
R. Hobson  
Miss C. Hopkin  
Miss C. Answorth  
Miss I. M. Walker

Dr. C. A. Chant, Prof., Toronto University, gave his lecture on "The Universe of Stars". The lecture was illustrated with slides and star maps. He also gave a brief account of the foundation and growth of the R A S C.. A hearty vote of thanks was tendered him on the motion of Mr. W. A. Robinson and Rev. Fahter Brady.

Signed... E. H. Darling

When one stops to consider the disadvantages facing organized astronomy in those early years, it really is a wonder that it happened at all. To point out a few details, membership fees were \$2.00, room rent was \$1.50 a night, the annual expenses for one year alone was \$150.00. Through the generosity of a few kind gentlemen, they did carry on. Meeting halls were at a premium in those days and it even cost them \$2.00 just to rent a few lantern slides. Their determination to promote astronomy was recognized even in the government as shown in the minutes of Feb. 2, 1909, that the Hon. J. M. Gibson, Lieutenant-Governor of Ontario became a member of the Hamilton Centre.

As long as there are stars in the sky that shine, there will be men and women, and not forgetting the children, who will look up at them and marvel at their beauty. Nor will they stop looking, nor be satisfied with the equipment they have to see better, they will not be satisfied until they are actually out there....amongst the stars.

R. Lang, Secretary

## Telescope Field Nights

by J.G.Craig

The earliest recollections of field nights are that they were held at the home of Mr. W. T. Goddard. The grounds were spacious and included the advantage of a swimming pool for those who backed off in amazement at what they had just seen in the telescope (until the pool was roped off.) Mr. Goddard was very generous in providing refreshments for everyone who came to look through the telescopes. He had, at some time prior to 1930, commissioned the Rev. Dr. Marsh to build a 5" refractor with mount and drive using a Clark lens. This was an excellent telescope and was mounted on a solid pier in Mr. Goddard's yard. It was later purchased by McMaster University and is at present being overhauled by the Hamilton Centre. Others who had telescopes brought them along and set them up to look at various objects.

At some time during the 1940's the site of Field Nights was changed to McMaster University. As many as 12-15 telescopes were set up on the grassed area south and west of the drill hall. Visitors were guided by a snow fence erected around the area to the telescopes and past the ticket selling tables. Coffee and doughnuts were served from a booth in the Drill Hall at no cost to the visitors. Other attractions were the 5" refractor housed in a domed structure on the roof of Hamilton Hall and approached by means of a winging stairs located in an equipment room on the top floor. In addition to movies in the lecture hall, the Spitz planetarium projector was operated in a planetarium produced by a large parachute suspended from the ceiling of Hamilton Hall.

In more recent years our Telescope Field Nights have enjoyed the use of expanded facilities at McMaster. Telescopes, ranging in size from 2½" refractors to 12½" reflectors are operated by their owners and assistants on lawns near the Physical Sciences Building. The Planetarium in the same building is in continuous operation from 7:00 PM to 11:00 PM (if there are sufficient crowds) with shows lasting approximately 30 minutes. The amphitheatre with its modern theatre type seats and projection booth provides an excellent setting for a variety of modern movies shown in succession during the evening.

A well-patronized feature in recent years has been a display and demonstration of telescope making. This has included an operating mirror grinding machine, various types of test equipment as well as mirrors and mounts in different stages of completion, tubes, and the usual small devices of the art and science of telescope making.

Although complete records have never been kept of the attendance at our Telescope Field Nights we have had in excess of two thousand at various times for the two consecutive nights. Even when it rains there is lots to see and learn.



## Amateur Telescope Makers' Group

by W. Keating

The Amateur Telescope Makers' Group (or ATMs for short) is the most active group of the Hamilton Centre as it meets twice each month. It also is the oldest group, having had its start back in 1958. In that year, at a Council meeting at Ed Ostrosser's house, it was decided that it would be well if a place could be found to "mess around with scopes."

Sam Swannie volunteered the use of his basement which was equipped with a lot of tools and machinery which would be useful in the construction of telescopes. A turn-out of 6-12 was always assured even in the snow and ice of mid-winter. It turned out that the ATMs even became the "parent" of the Discussion Group as some of the fellows always congregated in the living room for a chin-wag.

Eventually it became necessary to leave the Swannie residence and for awhile the meetings were held on the premises of Jim Winger. Here it where the 10" got started.

However when the ATMs outgrew the Winger's basement, Bill Pautley came to the rescue and offered the facilities of his shop on Monawk Rd.. Thus, since 1964, the meetings have been held there, every other Wednesday night. The 10" has come along and is virtually complete except for a part of the mount and the drive.

Meetings nowadays are nearly unbelievable. When you open the door you see about 30 people in various states of utter confusion, or so it would seem to the average layman. There's a group standing by the tea kettle, designing a new scope or tube. There's Ken Chilton jamming his fingers into the edger (if he keeps on we'll have to call him Lefty.) There's Mr. Catterson working away on our 8" mirror. There's Dean May--polishing, polishing, polishing. Once in a while, you'll see Harry Keating doing some tricky trigonometry on a scrap of paper--he's figuring out how deep a member should go on his mirror. In the office, there's Vladimir Ivanochko, Peter Ashenhurst and Robert Speck (the Three Musketeers?) working on the polishing machine, making it more efficient. (What's all that blood?) Suddenly you hear the clumps of feet overhead. You dash upstairs and there's Gord Thede, Les Ewan and Gord Craig peering through the tester. Someone cries, "But how come the Ronchi lines make squares?"

Really, though it is a lot of fun. Most of the members work very hard and learn a great deal. (Including the one who comes to get away from his wife.) A great many wonderful instruments are being produced. They will provide many observations.

Telescope makers will continue to thrive through the effort and the enthusiasm of the many men who turn out. Come on out and see for yourself.

## THE OBSERVERS' GROUP

by A.E. Chilton

The Observers' Group is one of the groups of the Centre which provides the members with an opportunity to use their talents for the acquisition of new knowledge.

Of course, many of our members observe on their own, and have done so ever since the beginning of the Centre back in 1909. You can still see our observers peering into their eyepieces in the early hours of the morning, but this is not the story of the individual observers. It is the story of what the group, as a whole, does.

From what I have been able to glean by picking the brains of the older members, serious group activities resulted from the international Geophysical Year and many of our members participated in this.

Then, in 1961, the National Observing Programme was announced and the Council decided to set up a committee. They carried on a very ambitious programme for about a year. Some of the more enthusiastic members during the "Active Period" were Ed Ostrosser, who concentrated mainly on planetary observations, Norm Sylvester, a dedicated Comet and Nova Searcher, and Stu Buntain.

Then came a rather inactive time, when interest in observing was sustained only by meteor watching sessions, combined with constellation studies.

These meteor watching sessions are a lot of fun. They are usually held at the Rock Chapel Gardens of the Royal Botanical Gardens. You can usually find our members wrapped in sweaters, blankets and sleeping bags, sitting on reclining lawn chairs, staring up at the sky. Usually one member is busy with the Coleman stove, making hot coffee to keep the other alive (since the present Director of Observations seems to have a proclivity for arranging cold weather for these nights.) Each time a meteor is sighted, great excitement prevails as everyone yells and points. Sometimes a tape recorder and short wave radio are present so that we can get an accurate timing of the appearance of the meteor.

Once in a while, the group assembles to watch eclipses or satellite phenomena on Jupiter. One of our most successful meetings was on Friday April 13, 1968 when we gathered to watch the Lunar Eclipse on that night. A great deal of data was assembled that night and forwarded to the proper authorities. Several members were struck blind, however, as one member circulated around taking flash pictures of the proceedings.

There is a great deal of enthusiasm present now. Your directors of sections have planned a new observing programme and are trying to get the members interested. All we need for another 60 years successful observing is a break from the weatherman.



## J U N I O R   G R O U P

The earliest information at hand about "Youth In Astronomy" in the Hamilton area commences in September 1959 in Waterdown. At the residence of Mr L V Powis, 22 Orchard Drive, Waterdown the first meeting was held. A constitution was drawn up naming the group as The Waterdown Astronomical Club and its first President, David Powis. The age being limited to 8 to 16 inclusive.

The club held their meetings at the Powis residence and their membership rose to 29 members. They enjoyed guest speakers from the Hamilton Centre, Messrs S Puntain, J G Craig, W S Mallory, L V Powis and J A Winger to name a few. Also attended lectures in Toronto and visited the David Dunlap Observatory. The Club eventually folded in 1963 when its members out-grew the club and some of them joined the Hamilton Centre.

The earliest mention of this Waterdown Astronomical Club in the minutes of the Hamilton Centre is in the Council Minutes of Nov 25/1960. Quote:- On a motion by J A Winger and 2nd by W S Mallory, that the Hamilton Centre donate the sum of \$25.00 to the Waterdown Astronomical Club towards the purchasing of mirrors for eight three-inch telescopes. It was thought that we should encourage these youngsters in the practice of the study of astronomy. The executive members felt that more activities to educate our junior members be incorporated into the Hamilton Centre. L V Powis, F Letson, R Nielson and K Jakques were nominated to organize and form a program." End of quote.

To name and give credit to the people who assisted in bringing about the education of youth is too great to mention here. The minutes of Sept 29/61 donates \$50.00 to the Junior Astronomical Club for room rental at McMaster University and other expenses.

On Jan 3/63 the Junior Group of the Hamilton Centre was formed with its first President being Robin Allen. Since then Douglas Craig, Dave Pearson, Les Chadwick and currently John Aquin have held that post.

Since the formation of the Junior Group they have presented each year to the regular meeting a Junior Night which is one of the highlights of our yearly program. Also it is gratifying to see the Juniors grow up to become senior members.

Robert Lang.



## THE STORY OF RADIO ASTRONOMY IN THE HAMILTON CENTRE

by R. McCallum

One year ago I had no idea that I would be concerned actively with Radio Astronomy.

My special duty in the Observers Group was the observing and recording of Sun-spots using a 4" reflecting telescope and a #12 density welder's glass as a filter.

I had known that Anthony "Tony" Freeth was building a radio telescope in Burlington where I also dwell.

At one of our meetings, I learned from Tony that he had noticed some activity on his recorder around the noon hours. I checked my drawings and found considerable sunspot numbers. From that time it seemed natural that Tony and I should be working together since there seems to be some relation between sunspots and radio emission. Tony's fine knowledge of electronics along with my own modest amount of information in this field would be advantageous to both of us. And, so our trip, not LSD, but ARA, amateur radio astronomy began.

Then, last fall, Tony moved from his home in Burlington to an apartment in Hamilton. This necessitated a relocation of his equipment. Fortunately I have plenty of room where I live with a good view from my back yard. I volunteered to operate his radiometer and recorder although I knew little of their operation.

The next thing I knew, Tony drove in with what looked like a flattened chicken coop on the top of his car.

I said, "What's this? Did you get side-tracked on the way to the dump?"

Tony replied, "This is the aerial. Have you got any nails?"

Tony clued me in on how the aerial should look. Then he left. I began looking for a hammer. After a while, I finally got the aerial together.

It consisted of two large wooden frames 5'x10' with chicken wire stretched across the frames. These were set at 90° and nailed with wooden supports. The focus was a thin length of wire stretched along the 10' width, 28" from the apex of the frames. This wire supported three dipoles tuned in length to 136 MHz frequency, or 2.2 meters wavelength. I set the aerial on an East-West base line and prepped it so that an imaginary line from the apex through the focus, would be directed at the sun at noon time.

Next came the radiometer and recorder, both home made. The recorder used a 3" chart. We set these in a room in my basement which I use as a combination study and hideaway. The feeder line was connected from the aerial to the radiometer, a switch was flicked and we were in business.

Due to the narrowness of the 3" chart, I was required to remain with the radiometer, since any intense emission sent the pen off the side of the chart where it became snagged. However, our results were encouraging. There was usually a noticeable rise on the baseline of the chart during the noon hours. The sun emits 136 MHz thermal radiation in its million degree corona about a diameter from its surface. We also received radio waves from weather satellites in our area which transmit pictures on our frequency.



We have some fine recordings of Essa II and Nimbus weather satellites. On July 27, 1967 we recorded intense sunspot activity and in July 1968 we recorded a huge solar flare.

Although we had minor problems with the radiometer, the recorder gave us the most difficulty. We needed a wider chart.

Fortunately I was able to obtain a commercial Leeds-Northrop Micromasc Recorder. This uses a 10" wide chart. Tony and I adjusted it to suit our needs and at present it is doing a great job. However, being amateurs, and always striving to improve our lot at as low a cost as possible, we decided to build a more efficient aerial.

Tony had a schematic drawing in a British Radio Astronomy article showing specifications for a cylindrical parabolic aerial for our frequency. I spent last winter building this aerial in my spare time. It is now in my yard and, to say the least, is quite a conversation piece.

The aerial itself is supported on two "A" frames 11 ft. apart with a galvanized pipe between them to act as a pivot. The aluminum reflecting wire is stretched between two parabolic plywood frames held in a 2'x4' wooden structure. The strands of the wire are 3" apart and are interwoven between the frames from over 400 ft. of wire. The focus of this curved reflector is 18" from the apex of the parabola. Three flat dipoles tuned to 136 MHz are supported along the focus by nylon cords. The feeder line is 100 ft. long stretching from the aerial to the radiometer. The 10 ft. wide aerial is on an East-West base line and can be easily pivoted to any declination.

Our increased sensitivity is giving us problems. Our band-width is in the 10 MHz area. This is too wide as we are picking up aircraft transmissions. This is undesirable as it is difficult to distinguish between satellites and aircraft. The next project will involve the building of a new tuner to reduce our band-width.

Future plans may include the construction of a similar aerial to operate as an interferometer unit. However, we must strive to have our set up working efficiently.

This new adventure for Tony and I has been exciting and rewarding. As for myself, a whole new field has been opened, especially now that Quasars and Pulsars seem to be of utmost importance in radio and optical cosmology.

As far as we know, we are the only amateurs in this field in the area. We would welcome any comments or suggestions from anyone interested.



## PUTTING THE HAMILTON CENTRE INTO ORBIT

One cold autumn night, over a red hot game of "Russian Billiards" a certain hyper-active member suggested that a monthly or quarterly newsletter might provide a spark of interest for the Centre. His opponent (me) said that it would be, but that it would be a lot of work. Sure enough, at the next Council meeting, there was the topic on the agenda. Before I could blink, it was all decided that there would be a quarterly publication and that I was Editor.

Not being one to shirk, I took up the duties with relish. (The mustard part comes later.) The Secretary was persuaded to part with some of his masters so that ORBIT could get into print. However, the subjects of content, format, etc. was not settled.

Your Editor decided that any publication has a duty to inform and entertain its readers as well as provide an opinion. With this in mind, we set out to make a newsletter. An appeal was put forth for material. (No member has ever turned down a request for material.) Thus, ORBIT began to take shape, with articles from the members, news of past achievements, future programmes, and even a bit of humour. (We even have a phantom poet who contributes jingles and rhymes on astronomical topics. The Editor has no idea who it is, as the poems always arrive through the mail.)

When all of the material is gathered, your Editor then has to type out the masters, and with two fingers only, it takes quite a while. This is an intriguing process as the master copies are like tissue paper. Typing isn't so bad (except when the centres of all the o's come out like they are now.) but drawing pictures is murder as the paper tends to tear easily.

After that, it's down to the Secretary's little "shack-out-back" where he keeps all of the Centre's files and records and the printing machine. This machine has to be seen to be believed. You have to open part of it, dump in a gallon or 6 of some gummy black fluid (It looks like bunker oil.), wipe it around, and then start to print. Printing isn't so bad until you start to print the second side of each sheet. Sometimes you make 10 or 12 second sides and then realize that you are putting the sheets in backwards and that the copies are upside down. However, when the difficulties are cleared away, and the Secretary and the Editor are ink to the elbows, the presses roll and ORBIT is produced.

The pages are then stapled together, sometimes with the Editor's finger, and are made ready for mailing. After an exhausting evening the hot dogs and tea are served (That's the mustard part).

All of this could not happen without the magnificent cooperation of all of the members. Ed Ostrosser's monthly highlights, The Phantom Poet, Who's Who, News of Activities and all of the other features could not happen without the interest and effort of the members. Our Secretary is the key man in the production of ORBIT as he does a great deal of hard work getting the physical preparations ready for the printing and looking after the mailing.

Your Editor really does enjoy doing this job and hopes that the membership enjoys the net result.

K.E.Chilton  
Editor



## THE DISCUSSION GROUP

by L.R.Ewan, Chairman

Since the monthly meeting and the ATM's were the only regularly scheduled activities of the Hamilton Centre, this left one Wednesday night per month free, which, of course was quite intolerable.

In order, therefore to utilize this time to the full The Discussion group was formed some eighteen months ago and it has held regular, some might say "irregular", meetings since.

Was it really regular for a past-president and an ATM director to be spread-eagled on the floor playing with billiard balls? Even though the balls represented spaceships---on a collision course yet. And would the fact that the floor was .00000000000000009705 light years long make a difference?

Amongst the other "irregularities" were the ball bearings dropped into a pile of dry cement to show meteorites disrupting the surface of the moon. The god, Vulcan, certainly was quaking that night.

U.F.O.'s were early disposed of. The consensus of opinion at the meetings end concerned with the initial wild statement of a certain terrestrial "object watcher? (Editor's note: Girls?)

No topic is likely to be brushed aside by our group--anything goes. As witness the summary by one Observing Chairman, of his talk on Evolution;--"Either from scum we come, or from slime we climb, or from slp we hop."

Nor do we hesitate to go from the ridiculous to the sublime; the thirty-odd (?) avid astronomers also met in the same long recreation room of billiard ball fame to be treated to a delightfully well reasoned treatise of the "Parallelism of Religion and Astronomy" by the Rev. Norman Green.

The very latest scientific discoveries and theories are the essence on which we thrive. Recently Pulsars were the subject of our withering analysis, being considered either natural phenomena or artificial beacons. Our group decided that they were not spaceships making left turns, resulting in one very dejected member and one hilarious discussion group.

Enthusiasm is still mounting in the group, as noted, now in its second complete year, and we are looking forward to another good year. The meetings, as well as being of some educational value, do help to create a club spirit and some sociality. Our ladies are appreciated in this latter aspect not only for their presence but for the appropriate refreshments which they so willingly provide to round off the evening.

## HAMILTON CENTRE GOES INTERNATIONAL

Since the Hamilton Centre is an active group it is only natural that it should come in contact with other groups in the study of Astronomy. The Hamilton Centre has many close associations with groups and associations around the world.

One of these is the Ewell Astronomical Society of Ewell, Surrey, England. They are also an active group, about the same size as the Hamilton Centre. In 1967 they made a tape recording, at which Patrick Moore was the guest speaker, and sent it to us. In return, I visited them in the summer of 1968 and have them a talk on "Astronomy In Canada" and in particular--in Hamilton. Since then, an exchange of newsletters has taken place and relations have become much closer.

Patrick Moore and Ulf Johansson proposed in 1966 that an international union of amateur astronomers would be a good idea, in order to facilitate exchange on information and correlation of observational data on an amateur level. When this idea was brought before the Hamilton Centre, it was accepted with enthusiasm. The Centre was one of the first organized groups in the world to endorse the IUAA.

In January 1967, Mr. W. Jamison visited our Telescope Makers' Group. He hails from New Zealand is a member of the Auckland Astronomical Society. (One of his great ambitions was to see Polaris while he was here.) A very interesting evening was held as Mr. Jamison told us of astronomy "down under". Again, an exchange of newsletters was set up.

The latest international group with which the Hamilton Centre has been associated, is the Niagara Frontier Council of Amateur Astronomical Associations. The purpose of the NFCAAA was to arrange an exchange of speakers and newsletters. This is an admirable idea since many of our members do a lot of hard work preparing a talk and give it only once. Since other groups would certainly benefit from these talks, the NFCAAA provides a medium of exchange. As a result, speakers from Hamilton are going to other associations and speakers from them will be coming to Hamilton. Groups participating in the NFCAAA are from Buffalo, Erie, Cheektowaga, Lockport, Syracuse, Geneva, Rochester, Elmira-Corning, Niagara Falls and Hamilton.

ORBIT, our newsletter also goes around the world to individuals on nearly every continent. We are now well-known in Brazil, India, Sweden, Britain, Ethiopia, Italy, Czechoslovakia, the USA and the USSR.

The Hamilton Centre realizes that astronomy knows no politics or national boundaries. We are ready to cooperate with all groups in every country of the world. The Hamilton Centre truly is an international centre of Astronomy.

K.E. Chilton



## A PEEK OVER THE FENCE OF THE FUTURE

Naturally, no one can foretell the future. But in the Hamilton Centre it is not hard to read minds, for often those minds are connected to very facile tongues. Ideas flow. Everyone is free to express his own opinions, with no hard feelings afterwards. Some of these ideas are shot down like flaming meteors while others survive and come to fruition. Your Editor has been listening and presents the following as a glimpse into what the future may hold for the society and for the Centre.

1970 most definitely holds a great deal for the Centre. We are planning a magnificent effort to observe the Solar Eclipse of that year. This is definite, and at present, only the site and weather are the unknown factors.

Certain members have been plumping for the Hamilton Centre to host the General Assembly in the near future. We have had the General Assembly here before, and with considerable success.

Our own observatory is a topic which is raised quite often. The Discussion Group has seen fit to ponder over the question and has discussed many of the pros and cons. Undoubtedly this will come to pass as there are certain members who get very hot under their collars when you express an opinion against having an observatory. Thus, you can look for us to have an observatory soon.

Then there is the question of what to put in it. Of course, there is our 10" and 8" reflectors. Someone has suggested that we build a 40" for it, and one member even went so far as to suggest that we apply for the 156" blank from the Mt. Kobau project.

There is a distinct possibility that the centre will have an even larger radio telescope.

For certain, however, we will have a very bright future (some might say 1st magnitude). We have Idea men with capital I's, and Enthusiasts with capital E's. We cannot fail.

Editor's note: As I look back over what I have just written, I feel that there might be some who will say that I have been too exuberant. I will let you know in the special issue of this paper called "75 Years in Orbit".

Your Executive Officers

by Harold Johnston

PRESIDENT: G.A.Thede, B.Sc.

Gord joined the Hamilton Centre in 1960 and has been in charge of Films and Projectionists since being elected to the Council in 1961.

Gord got his B.Sc. at Queens University. He has a spacious modern home in the area of Ryckmans Corners, where he is planning to erect his astro-camera on the stump of a tree.

He is presently building a 6" reflector telescope. Gord's other interests include photography (especially Astro-Photography) and amateur radio (VE3DLP).

1st VICE-PRESIDENT- K.E.Chilton

Ken first joined the Centre in 1966 after being an unattached member since 1964. He served as 2nd Vice-President on the Council last year. He is presently Director of Observations and Editor of Orbit. He is also a member of the British Astronomical Association, the American Association of Variable Star Observers and is one of the prime movers behind the International Union of Amateur Astronomers.

His current project is to study the polarized light from Jupiter's satellite Io with his 12 $\frac{1}{2}$ " Newtonian-Gregorian Telescope.

2nd Vice-President- L.V.Powis

Les has been active on the Council since 1958 after joining the Hamilton Centre in 1957. He was President in 1961, Secretary for 4 years and is now in his second term as 2nd Vice-President. Les has been the Recorder on the National Council for the past 5 years and has attended General Assemblies in Toronto, Ottawa, Montreal and Winnipeg.

Les had the distinction of being the first on the North American Continent to see the Comet Mrkos on Aug.11,1957. (It was darn near called Powis comet.)

He is presently building a 12 $\frac{1}{2}$ " open tube Cassegrain-Newtonian telescope and his other interests include Radio Astronomy, ham radio, and science in general.

TREASURER- C.A.McDonald

Mac first joined the Centre in 1959 and has served on the council since 1961 as 1st Vice-President, 2nd Vice-President and Treasurer. He has also been Director of the Observers Group and is presently in charge of Astrophotography. Mac has helped represent us at 3 national assemblies, including the last one at Calgary. Two highlights of his observing career were the Solar Eclipse of 1963 and the recent fireball of Dec.9,1968.

Mac's other hobbies include stamp collecting, curling and photography.



SECRETARY:-R.Lang

Bob joined the Hamilton Centre in 1964 and is now in his second term as Secretary since being elected to the council in 1965. He is chairman of the Public Service and Education Committee, a member of the Centre's historical committee and is also the Centre's publicity agent. (Editors note: See also his role in producing Orbitelsewhere in this issue.)

Bob's observing is concentrated on meteor watching. His other main interests are writing, painting and abstract photography.

CURATOR - J.G.Craig, B.Sc.

Gord joined the Hamilton Centre in 1951, was elected to the Council in 1953 and has served as President twice, 1958-59 and 1966-67. He was Director of Observations from 1961 to 1966 and is presently director of the Meteor observing group.

Gord is also a member of the AAVSO and of the British Astronomical Association. He has two telescopes-- a 4" refractor and an 8" reflector.

NATIONAL REPRESENTATIVE - W.A.Fautley

Bill joined us in 1962 and has been on the council since 1964. He has been the Hamilton Centre's representative since 1965. Bill is active in the Discussion Group and the Telescope Makers which has met in his shop every two weeks since 1964.

He has also represented our Centre as official delegate at three National Assemblies.

Bill has two telescopes, a 12½" f8 and a 6" f6 and likes to concentrate on M41 and on mapping the moon.

Two highlights of his observations were the Solar Eclipse of 1963 from Moose River and the Bolide on April 25, 1966.

ODE TO APOLLO EIGHT

1.  
Armed with the Power  
Of a thousand locomotives,  
Three men in a spire  
Lifted from the earth,  
Balanced on a fury.

2.  
With perfect precision,  
Ever more telling,  
The rocket ascended.  
While the anxious earth...  
.....WATCHED.....

3.  
Earth orbit attained,  
(A venture routine).  
The capsule was decreed,  
To leave earth's grasp  
And spring into space.

4.  
In the pre-dawn darkness,  
The engines burst into flame,  
(A bullet-speed multiplied).  
While the islanders below...  
.....Looked UPWARDS.....

5.  
First visitors to Luna,  
On a graying course.  
A hidden deceleration - then  
Captured; perchance forever..  
.....ALONE.....

6.  
Conversations with earth,  
Electronic views returned,  
Close study of our neighbor  
Marching, timeless, in space,  
With Infinite bleakness.

7.  
Quick glances toward home,  
(A troubled globe).  
Viewed from a distant,  
All nations and ideologies,  
Blend into one.

8.  
The moment of truth passes by;  
The rockets should have fired.  
Observed by craters,  
That have never observed the  
earth.  
HOLD; The capsule is acquired!

9.  
Speeding toward home  
And one final hurdle.  
Tangential wedge to be entered  
In earth's cushion of air,  
Soft like IRON.

10.  
A flaming meteor  
Streaking through the night  
sky.  
Earth clutches at its returning  
sons,  
And lowers them darkly  
To her liquid bosom.

11.  
Across the tractless vacuum  
Three wise men(Christmas travelers).  
Had spoke of Genesis.  
Yet this is the beginning...  
What more to follow???

To William Anders, Frank Borman and James Lovell  
From our PHANTOM POET.



### Picture Legends

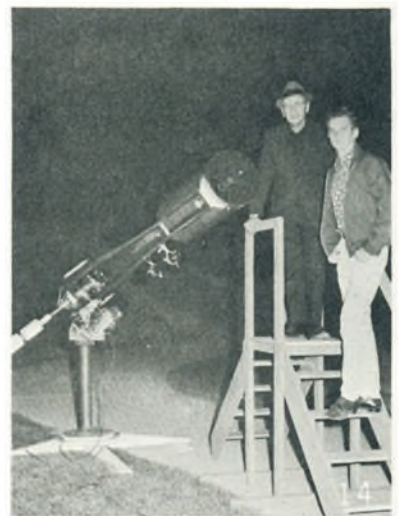
The following two pages of pictures are described below.

1. Winners of the 1968 Hamilton Centre's Science Award. Committee Chairman, James A Winger (left) introduces the winners, Alan Lamshead and Frederick Reeve who demonstrate their science exhibit, a Solar Flare Detector.
2. William A Fautley, Vladimir Evanochko, Clarence A McDonald and Kenneth E Chilton are part of the members planning a Solar-1970 -Expedition.
3. First annual picnic held at Hoover (YMCA) Park in June 1968.
4. Norman Green receiving his Membership Award from Ken Chilton at the December Membership Meeting. The picture was taken by the President of the Hamilton Centre, Gordon A Thede, which was developed at the meeting as part of the President's Address. His topic being "Astro-Photography". Norman Green is on the left.
5. At the Craig farm, the A T M's prepare the furnace for melting aluminum. From pots and pans, etc., came the aluminum which was used in die-casting the mount for the Centre's 10-inch telescope. J Gordon Craig, son Douglas Craig, Don Portree (molder) and his son Rick Portree are part of those assisting.
6. Gordon A Thede (left) presents Membership Award to Leslie V Powis at Council meeting in November 1968.
7. Douglas Craig, Alfred Boardman, Gordon Craig, Frank Schneider, William Fautley, Charles Rader and son holding sign are part of the members shown with the 10-inch parts display at the work shop of William Fautley.
8. Andy Robertson, Clarence McDonald, Gordon Craig and James A Winger are working the 10-inch mirror on the mirror grinding machine.
9. At McMaster University. The 1968 Field Nights. The following pictures show members with their telescopes for public viewing;
  9. Edward Ostrosser
  10. William Fautley
  11. Frank Schneider
  12. James Catterson
  13. Edward A Colquhoun
  14. William Fautley and guest.
15. 1934 group in front of the David-Dunlap Observatory. M Partridge Dr Findlay, Dr Warren, Rev Maunsell, Norman Broadhead, Prof Millman, George Campbell, Mr Porterhouse. Dr McNeill, Mr Waugham Wilford Mallory, Dr Johns and E E Bossence.
16. Junior Group presents Junior Night in Feb. 1968. John Garden with his telescope, Les Chadwick, Roberta Winger, Naoma Winger, Peter Lovrićk, John Aquin, Billy Carson, Jim Pretula, Bruce Marshall, Randy Robinson and Kenneth Gee.











## S U P P L E M E N T

The following pages of the supplement deal with the members past and present of the Hamilton Centre. The past is not complete due to the minutes being missing of the period 1926 to 1935 inclusive.

APOLOGIES... If there are any infractions, errors and/or omissions, Please accept our apologies. As this Special Issue of ORBIT was a crash project there was not sufficient time for editing. As an example, J G Craig was omitted on the Council Members list. He is in his 16th year on the Council.

### THE LAST WORD

Throughout this issue of ORBIT, one may come to the conclusion that the interests in astronomy has increased in depth and widened into new avenues of activities. On the whole, the membership, is made up of people having a desire to contribute their measure of effort in keeping the amateur astronomical torch burning. The preceding articles indicate that the average man will overcome all obstacles in his search for truth, knowledge and achievements.

As this final chapter is being prepared for printing, my thoughts goes to the recent success of the three men in the Apollo- Eight Lunar Project. Man's first step beyond the call of earth clearly shows his adaptability.

PERHAPS in OUR time we may see man trekking his way to other planets. Nature has placed many obstacles in his pathway to the stars. But he will solve them as time goes on. Us Earth-Bound-Lings will stand by our scopes and Dream as they go.

Yet in the future to come and pass. When man has seen all there is to see. Now wise beyond wisdom's wisdom. He may turn his footsteps homeward.... to the green hills of Earth.... and perhaps then he may say, "The stars look beautiful from here."

THE PROPERTY OF  
THE ROYAL ASTRONOMICAL  
SOCIETY OF CANADA  
252 COLLEGE ST.  
TORONTO 2B

R Lang



## A W A R D S

Presented to members of the Hamilton Centre for their outstanding service and/or continued membership.

### S E R V I C E A W A R D

W T Goddard, B.Sc.,E.E.  
W J McCallion, Prof., M.A.  
H B Fox

### M E M B E R S H I P A W A R D

G W Bell, M.D.  
E E Bossence  
A R Clarke  
G E Campbell, M.A.  
H H Cornfield  
J G Craigmyle  
H B Fox  
N Green, B.A., L.Th.  
V C Jones  
E A Morgan  
G Murchie  
T W Norton  
E Ostrosser  
O J Paton  
L V Powis  
F Schneider  
G E Shepperd  
S J Swannie  
G M Vansickle  
S Wicks  
B Wishart

## H O N O R A R Y P R E S I D E N T S

Mr William Bruce  
 Rev. Dr. D B Marsh, Ph.B., Sc.D., F.R.A.S.  
 Mrs C Marsh  
 Mr W T Goddard, Bs.C., E.E.

## P R E S I D E N T S

1909 & 1910	Mr G P Jenkins. F.R.A.S.
1911, 12, 13, 14 & 15	Mr W Bruce
1932 & 1933	Mr W S Mallory, M.A.
1934 & 1935	Prof W Findlay, Ph.D.
1936 & 1937	Prof A E Johns, Ph.D.
1939 & 1939	Mr G E Campbell, B.A.
1940 & 1941	Mr N H Broadhead
1942 & 1943	Mr H B Fox
1944 & 1945	Mr W T Stewart
1946 & 1947	Rev E F Maunsell
1948 & 1949	Mr T M Norton
1950, 51 & 52	Prof W J McCallion, M.A.
1953 & 1954	Mr O J Paton
1955 & 1956	Mr J H Sled, Phm.B.
1957	Mr W J Sled, B.A.
1958	Rev N Green, B.A., L.Th.
1959 & 1967	Mr J G Craig, B.Sc.
1960	Mr S J Buntain
1961 & 1966	Mr J A Winger
1962	Mr L V Powis
1963	Mr E Ostrosser
1964	Mr A Robinson
1965	Mr R Nielson
1968	Mr E A Colquhoun
1969	Mr G A Thede, B.Sc.



### 1ST VICE-PRESIDENT

1909 & 1910	Mr	W	Bruce, J.P.
1911 & 1912	Mr	E H	Darling, A.M.,C.S.C.E.
1913, 14 & 15	Mr	W A	Robinson
1932	Rev	J	Samuel
1933	Mr	W T	Goddard, B.Sc.,E.E.
1934 & 1935	Prof	A E	Johns
1936, 37, 38, & 39	Mr	T H	Wingham
1940, 44, & 45	Rev	E F	Maunsell
1941	Mr	H B	Fox
1943	Mr	W D	Stewart
1946 & 1947	Mr	T M	Norton
1948 & 1949	Prof	W J	McCallion, M.A.
1950, 51 & 52	Mr	O J	Paton
1953 & 1954	Dr	M W	Johns, Ph.D.
1955, 56 & 57	Rev	N	Green, B.A.,L.Th.
1958	Mr	J G	Craig, B.Sc.
1959	Mr	S J	Buntain
1960 & 1965	Mr	J A	Winger
1961	Mr	E	Ostrosser
1962	Mr	W K	Harris
1963	Mr	A	Robinson
1964	Mr	R	Nielson
1966	Mr	C A	McDonald
1967	Mr	E A	Colquhoun
1968	Mr	G A	Thede, B.Sc.
1969	Mr	K E	Chilton, F.R.A.S.

### 2ND VICE-PRESIDENTS

1910	Mr	E H	Darling, A.M.,C.S.C.E.
1911	Mr	W A	Robinson
1914 & 1915	Rev	J J	Morton
1932, 33, 34, & 35	Mr	T H	Wingham
1936 & 1937	Mr	G E	Campbell, B.A.
1938 & 1939	Mr	W T	Goddard, B.Sc.,E.E.
1953 & 1954	Mr	J H	Sled, Phm.B.
1955 & 1956	Mr	W J	Sled, B.A.
1958	Mr	S J	Buntain
1959	Mr	J A	Winger
1960	Mr	E	Ostrosser
1961 & 1969	Mr	L V	Powis
1962	Mr	F R	Letson
1963	Mr	R	Nielson
1964 & 1965	Mr	C A	McDonald
1966	Mr	E A	Colquhoun
1967	Mr	G A	Thede, B.Sc.
1968	Mr	K E	Chilton, F.R.A.S.

### 3RD VICE-PRESIDENTS

1914 & 1915	Mr	E	Scholes
1932 & 1933	Prof	W	Findlay, Ph.D.
1934, 35, 36 & 37	Mr	W T	Goddard, B.Sc., E.E.
1938 & 1939	Mr	W S	Mallory, M.A.

### SECRETARY-TREASURER

1932	Mr	G E	Campbell, B.A.
1936	Rev	N	Green, B.A., L.Th.
1937 & 1938	Mr	N H	Broadhead
1939 & 1940	Mr	H B	Fox
1941	Miss	P	Riddle, B.A.
1942, 43 & 44	Mr	J R	Graham
1945	Mr	D G	Burns
1946 to 1962 incl	Mr	G	Murchie

### SECRETARY

1909	Mr	E H	Darling, A.M., C.S.C.E.
1910 to 1915 incl	Mr	T H	Wingham, B.A., Sc.
1933	Mr	J A	Little, B.A.
1934	Mr	S W	Scammell
1935	Rev	N	Green, B.A., L.Th.
1963 to 1967 incl	Mr	L V	Powis
1968 & 1969	Mr	R	Lang

### TREASURER

1909 & 1910	Mr	A T	Neill
1911 to 1915 incl	Mr	S	Jones
1933, 34 & 35	Mr	G E	Campbell, B.A.
1963	Mr	S J	Buntain
1964	Mr	G	Johnson
1965 & 1966	Mr	G	Murchie
1967 to 1969 incl	Mr	C A	McDonald

### CURATOR

1932	Mr	H	Rodger
1933 to 1944 incl	Mr	W T	Wingham, B.A., Sc.
1945 to 1960 incl	Mr	G E	Campbell, B.A.
1961 to 1968 incl	Mr	G M	Vansickle
1969	Mr	J G	Craig, B.Sc.



### COUNCIL MEMBERS

1	Aldous	H		1	Letson	F R	
2	Bennington	P W		3	Little	J A	
7	Bossence	E E		2	Livingstone	R J	
2	Brady	P		25	Mallory	W S	
6	Broadhead	N H		1	Marsh	A B	Miss
8	Buntain	S J		9	Marsh	J A	
4	Burns	D G		1	Mason	G E	Miss
9	Butcher	F H		21	Maunsell	E F	
29	Campbell	G E		11	McCallion	W J	
4	Colquhoun	E A		6	McCallum	R	
3	Corbet	C V B		6	McDonald	C A	
2	Corke	N	Miss	3	Milne	W G	
1	Cornfield	H H		8	Morton	J J	
1	Craigmyle	J E		8	Nielson	R	
2	Dalton	G R		14	Norton	T M	
4	Darling	E H		1	Osbaldeston	J B	
1	DeFransisco	V		8	Ostrosser	E	
2	Dorosh	F		1	Parker	W	Miss
2	Ewan	L		10	Paton	O J	
4	Ewanick	P		2	Pierson	C	
3	Ewel	J J		9	Powis	L V	
5	Fautley	W A		2	Rader	C	
17	Findlay	W		4	Robertson	A J	
2	Firby	R		6	Robinson	A	
32	Fox	H B		6	Robinson	W A	
5	Freeman	E G		3	Samuel	J	
2	Freeth	A G		5	Scammell	S C	
6	Goddard	W T		6	Scammell	S C	Mrs
7	Graham	J R		23	Schneider	F	
8	Green	N		1	Scholes	E	
2	Harper	J M		2	Seville	N	
2	Harper	J M	Mrs	4	Shepperd	G E	
7	Harris	W K		9	Sisman	F	
1	Hodgson	W		2	Skeates	J W	
4	Jacks	W		5	Sled	J H	
4	Jackson	G M		7	Sled	W J	
1	Jaffray	W R		15	Stewart	W D	
4	Jenkins	G P		8	Swannie	S J	
23	Johns	A E		1	Sylvester	N	
2	Johns	M		6	Taylor	J S	
1	Johnson	G		2	Taylor	V	
2	Johnson	T L		5	Thede	G A	
2	Johnston	H		11	Vansickle	G M	
10	Jones	L O		3	Walker	I M	Miss
2	Jones	M		2	Waring	T D	
2	Keating	W		5	Welburn	L W	
2	King	S		2	Williams	J M	
3	Kingdon	J		12	Winger	J A	
3	Langly	E		19	Wingham	T H	
3	Leeds	R		13	Wishart	B	

D I R E C T O R Y

1968 - 1969

OFFICERS

Honorary President	W T Goddard, B.Sc.,E.E.
President	G A Thede, B.Sc.
1st Vice-President	K E Chilton, F.R.A.S.
2nd Vice-President	L V Powis
Secretary	R Lang
Treasurer	C A McDonald
Curator	J G Craig, B.Sc.
Nat Council Rep.	W A Fautley

C O U N C I L M E M B E R S

D Craig	H Johnston
L Ewan	R McCallum
R Firby	E Ostrosser
H B Fox	C Rader
A Freeth	J W Skeates
N Green, B.A.,L.Th.	J A Winger

P A S T P R E S I D E N T S

E A Colquhoun (1967/1968) & J G Craig, B.Sc. (1966/1967)



Members In Good Standing As Of December, 1968

Legend:

- |                  |                 |                   |
|------------------|-----------------|-------------------|
| 1- Own Telescope | 6- Comet/Nova   | 11- Occultations  |
| 2- Astro-Photog. | 7- Meteor Watch | 12- A T M's       |
| 3- Sun Spots     | 8- Messier Grp. | 13- Discussions   |
| 4- Planetary     | 9- Aurora Bor.  | 14- Pub Serv & Ed |
| 5- Var, Stars    | 10- Eclipses    | 15- "ORBIT" Comm. |

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Aquin	J															
Ashenhurst	P H	.	x		x	x		x	x		x	x	x	x	x	x
Bankier, Miss	J															
Barnes	R															
Bedell, Miss	B A															
Bell, Dr	G W															
Bennett	E G															
Bennington	P W	x														
Bodnar	M L	x			x									x		
Bossence	E E															
Carson	W															
Catterson	J	x	x		x			x			x	x	x			
Chilton	K E	x			x	x		x			x	x	x	x	x	x
Colquhoun	E A	x	x	x	x			x	x		x		x	x		
Corbet	C V															
Cormick	G C	x	x		x						x					
Cornfield	H H				x										x	
Craig	D	x	x		x	x		x	x				x	x		
Craig	J G	x	x		x	x		x	x			x	x	x		
Craigmyle	J E											x	x	x		
Cunningham Miss	C															
DeFransisco	V															
Dickson, Mrs	S E															
Eismont	W															
Evanochko	V	x	x	x		x		x	x		x		x	x		
Ewan	L	x	x		x						x	x	x	x		
Fautley	W A	x	x	x	x						x	x	x			
Firby	R															
Fox	H B	x														
Freeth	A G				x											
Gagne	G															
Garden	J W	x	x	x	x		x		x		x	x	x			
Green	N	x	x		x				x						x	x
Hrycyk	J															
Jones	V C								x						x	
Johnston	H															
Keating	H J															
Keating	W				x								x	x		
Lamshead	A															
Lang	R		x					x							x	x
Larsen	J K	x													x	
Lemon, Miss	C	x			x		x	x			x				x	
Lovett, Mrs	J				x			x					x			
MacNiell Miss	B															
Mallory	W S															
May	D	x			x	x	x	x	x		x	x	x			
McCallum	R	x		x	x		x	x		x	x			x	x	x
McDonald	C A	x	x				x	x		x	x		x	x		

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Milos	J															
McKenzie	J	x		x									x			
McGhee	W A															
Morgan	E A															
Nielson	R															
Ostrosser	E	x			x		x									
Packer	R															
Pearson	D															
Pearson	G															
Powis	L V	x	x	x	x		x	x			x		x	x		
Pretula	J															
Pugh	L															
Purdy	A J															
Rader	C	x	x	x	x	x	x	x		x	x		x			x
Reeve	F															
Sawyer, Miss	N															
Scheider	F	x	x	x	x		x	x		x	x	x	x			
Sheppard Miss	G	x			x	x	x	x		x						
Shepperd	G E															
Sherman	B	x			x			x	x			x	x			x
Skeates	J W	x	x	x	x				x	x						
Speck	R	x	x		x	x	x	x	x	x		x	x	x	x	
Swannie	S J															
Taylor, Miss	D															
Thede	G A	x	x		x						x		x	x	x	
Turchynsky	D															
Vandavelde	D															
Vansickle	G M	x														
Wark	G															
Weaver	R R															
Welbourn	L W															
Winger	J A	x	x		x								x			
Wishart	B															
Wright	M		x		x								x			









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