



Supplement to the JOURNAL

of the **ROYAL ASTRONOMICAL**
SOCIETY of CANADA

ANNUAL REPORT 1983

APRIL 1984

PRESIDENTS OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

1890–1894	C. Carpmael	1940–	J.A. Pearce
1895–	L.W. Smith	1941–1942	F.S. Hogg
1896–1897	J.A. Paterson	1943–1944	A.V. Douglas
1898–1899	A. Harvey	1945–1946	A.E. Johns
1900–1902	G.E. Lumsden	1947–1948	J.W. Campbell
1902–1903	R.F. Stupart	1949–1950	A. Thomson
1904–1907	C.A. Chant	1951–1952	C.S. Beals
1908–1909	W.B. Musson	1953–1954	J.F. Heard
1910–1911	A.T. DeLury	1955–1957	R.M. Petrie
1912–1913	L.B. Stewart	1957–1959	H.S. Hogg
1914–1915	J.S. Plaskett	1959–1960	A. McKellar
1916–1917	A.D. Watson	1960–1962	P.M. Millman
1918–1919	A.F. Miller	1962–1964	A.J. Northcott
1920–1921	J.R. Collins	1964–1966	K.O. Wright
1922–1923	W.E.W. Jackson	1966–1968	M.M. Thomson
1924–1925	R.M. Stewart	1968–1970	J.E. Kennedy
1926–1927	A.F. Hunter	1970–1972	H. Simard
1928–1929	W.E. Harper	1972–1974	J.L. Locke
1930–1931	H.R. Kingston	1974–1976	J.D. Fernie
1932–1933	R.K. Young	1976–1978	A.H. Batten
1934–1935	L. Gilchrist	1978–1980	J.R. Percy
1936–1937	R.E. DeLury	1980–1982	I. Halliday
1938–1939	W. Findlay	1982–1984	F. Loehde

SECRETARIES OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Corresponding Secretary 1890–1901; Secretary 1902–1919, General Secretary 1920–1949; National Secretary 1950 onwards.

1890–1899	G.E. Lumsden	1932–1935	R.A. Gray
1900–1902	W.B. Musson	1935–1958	E.J.A. Kennedy
1902–1917	J.R. Collins	1958–1964	J.E. Kennedy
1918–1919	W.E.W. Jackson	1964–1971	N. Green
1920–1923	A.F. Hunter	1971–1974	C.E. Hodgson
1924–1927	F.T. Stanford	1974–1977	D.J. FitzGerald
1928–1931	L. Gilchrist	1978–1980	N. Green
		1981–	R.P. Broughton

HONORARY MEMBERS OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

Dr. V.A. Ambartsumian (U.S.S.R.)	Dr. A.R. Sandage (U.S.A.)
Dr. R.B. Baldwin (U.S.A.)	Dr. Martin Schwarzschild (U.S.A.)
Dr. A. Dollfus (France)	Dr. Josif S. Shklovsky (U.S.S.R.)
Dr. Leo Goldberg (U.S.A.)	Prof. Bengt G. Strömgren (Denmark)
Dr. W. Iwanowska (Poland)	Dr. A. Unsold (Germany)
Dr. J.H. Oort (Netherlands)	Prof. H.C. van de Hulst (Netherlands)
Sir Martin Ryle (England)	Dr. R.v.d. R. Woolley (S. Africa)

THE REPORT OF THE PRESIDENT

The year 1983 was an eventful one for The Royal Astronomical Society of Canada and one in which we could justly feel proud. The acquisition of a new 'home' at 136 Dupont Street in Toronto must rank very highly in our minds. And certainly we will not soon forget the General Assembly hosted by the Quebec Centre and its bringing together of two cultures within our own Society. Also in 1983 the Society started the process of improving its services to our members by establishing an Endowment Fund, consolidating a number of under-utilized separate accounts.

Our new headquarters culminates many years of searching for a suitable location for the Society and many thanks should be extended to the members of the Property Committee and especially its Chairman, Peter Broughton, for much work in securing the premises and then making it possible to move in during July. A fine reception and official opening was held on September 24 with past Presidents, Drs. Helen S. Hogg and Peter Millman sharing the cutting of the traditional ribbon with yours truly. For a well-planned house-warming we have J. Randy Attwood and his Committee to thank.

The General Assembly in Quebec City at Laval University was unique in many ways. For one it was the first time a Francophone Centre had hosted an Assembly. For another it was the first time simultaneous translation services were offered to delegates in either official language of Canada truly opening up the Paper Sessions. Finally it brought together the Society members, the American Association of Variable Star Observers and the many amateur astronomical groups in Quebec operating under the umbrella of L' Association des Groupes d'Astronomes Amateur du Québec (A.G.A.A.). Without a doubt its uniqueness spurred on its organizers to produce an astronomical 'event' that had the precision of a computer but was strongly flavoured by the charm of Old Quebec City.

For many the Assembly was a first-ever visit to Quebec City and certainly the historic Port easily captured their hearts. A tour that included the old town, Battlefield Park and Jacques Cartier's reconstructed discovery ship 'Hermine' certainly made the delegates more appreciative of our colourful past. Later we were thrust into the 20th century with a visit to the wind-swept slopes of Mont Mégantic where one of Canada's largest telescopes readied itself for the evening skies.

Special congratulations must go to the Quebec Centre's Assembly Chairman Dr. Réjean Dutil and his excellent liaison Damien Lemay for bringing together a fine group of starry-eyed enthusiasts who successfully organized a very complex meeting of amateur and professional astronomers.

The Society was honoured to be able to recognize its members for their dedication to and for their activities within astronomy. Dr. Lloyd Higgs, a past editor of the Journal was cited by the Ottawa Centre for his many contributions over the years to that Centre and received the Society's highest accolade, the Service Award, as did Chris Aikman for his fine work for the Victoria Centre. The Ken Chilton Prize for observing excellence was awarded to Chris Spratt of the Victoria Centre for his outstanding variable star observations making him one of the premier variable observers in the world. Messier certificates were awarded to Allister Ling, Gary Boyle and Enrico Kindl of Montreal, and Kingston's Gus Johnston and James Scotti for their viewing completion of the Messier catalog of clusters, Nebulae, and Galaxies.

As a sponsor of the Canada-wide Science Fair our Society takes a keen interest in the projects that have an astronomical theme. This year the National Science Fair was held in Saskatoon and the R.A.S.C. awarded a first prize to Donald Netolitsky of Medicine Hat for his project on "Solar Rotation" and second prize to Klaus Oberpartierer of Oakridge, Ontario, for his on "Black Holes". Tied for third were Stephane Côté of St. Fulgence and Sylvan Lebeuf of Chicoutimi, both in Quebec. The winners now have a year's membership in the Centre of their choice and we wish them the best in their studies of the heavens.

Two strong forces in astronomy in Canada were lost this year with the passing of Roland Noel-de-Tilley of the Centre d'Astronomie de Montréal and John Hodges of the Regina Astronomical Society. Their impact on the promotion of astronomy in their regions was very strong and will be missed greatly.

Many of our Centres have taken advantage of the Speaker Exchange Program and we want to encourage this important interchange of ideas and people. The Society also wants to encourage its members and councillors to make use of the travel grants that off-set travel costs to our General Assemblies and Council meetings. We continued to assist Centres with either grants or loans to help our local groups promote astronomy in their communities.

The R.A.S.C. continues to receive inquiries from many local amateur astronomy groups with the thought of eventual Society affiliation. It is certainly strong evidence of a healthy interest in astronomy in Canada.

During my two year term as your President I have had the opportunity to visit many of our Centres and have grown even more appreciative of the talent and dedication of our members. I am especially appreciative of all those in our Society that have helped make my years as President an enjoyable and hopefully productive period. I can't thank enough our fine executive, the editors of our publications and all Council members who have taken an active roll in developing an organization built upon strength and dedication. And ... at home, at 136 Dupont Street in Toronto, we have Miss Rosemary Freeman, our Executive Secretary, most ably handling our day-to-day business in her usual efficient manner. The Society is in good hands. Thank you.

FRANKLIN C. LOEHDE, *President*

REPORT OF THE NATIONAL SECRETARY

1983 was a year of financial restraint in many quarters. Perhaps the decline in our membership by 8% reflected that reality. It certainly was the reason given by the Ontario government for refusing to continue their longstanding grant to the Society. In light of such cutbacks, the Society was especially grateful to receive the continuing and increased support of the National Science and Engineering Research Council (NSERC) grant.

Without reducing its effectiveness in promoting astronomy among its members and the public at large, the Society also has shown financial responsibility. The new building will not only be a source of income but will save the Society from ever-increasing rental payments. Here too we are pleased that the City of Toronto has recognized our valuable contribution to the scientific and cultural life of Canadians by reducing our property tax burden.

Finally, we express our appreciation to Rosemary Freeman for her careful management of the office, and in particular for compiling the following membership record as of September 30th.

	1982	1983
Calgary	92	100
Edmonton	105	119
Halifax	82	103
Hamilton	64	66
Kingston	37	36
Kitchener-Waterloo	37	23
London	41	37
Centre Français de Montréal	59	43
Montreal	91	98
Niagara	46	47
Ottawa	176	172
Québec	87	93
St. John's	13	10
Sarnia	25	20
Saskatoon	50	46
Toronto	739	704
Vancouver	108	110
Victoria	121	119
Windsor	41	33
Winnipeg	66	52
Unattached to Centres:		
Canada	390	242
United States	340	328
Overseas	54	53
Honorary	15	14
	<hr/>	<hr/>
	2879	2668

PETER BROUGHTON, *National Secretary*

CALGARY CENTRE

The Calgary Centre celebrated its twenty-fifth anniversary on January 29 with the official opening of the Wilson Coulee Observatory. More than one hundred people were present when Calgary Mayor Ralph Klein unveiled the dedication plaque for the Observatory. A highlight of the ceremonies was a short speech by Past President John Howell, who noted that he, Brian Clarke, Ken Pawson, Bob Nelson and Allan McQuarrie had all attended the first meeting on January 29, 1958 and all were present at this official opening.

Since then, the Observatory's 12.5-inch Lingford telescope has been in constant use for both casual star-gazing and serious observing projects. Many school and Scout groups have been given tours of the facility. Some Centre members are observing variable stars and sending their results to the AAVSO. Others are participating in two projects organized by the Association of Lunar and Planetary Observers, to help map the Luna Incognita region of the Moon during favourable librations, and to time occultations of Jovian satellites in an effort to improve their orbital elements. An astrophotography course is being given at the Observatory to interested members to improve their skills. Keith Hitchon, a Centre member, has won first prize for an astronomy project in the Calgary Science Fair, and was the Canadian winner of NASA's Summer Student Award.

Walter Stilwell, the first President of the Centre, has been voted in as our Honourary President. Our meetings remain well-attended, and we were fortunate this year to have had as guest speakers both the current National President, F. Loehde, and the former National President, Dr. A. Batten. This year's Astronomy Day was held on April 22 and 23, and included a free Planetarium show, a NASA display, observing sessions and a Planetary Film Festival.

Several events outside the Centre signal a continuing interest and healthy growth for astronomy in Calgary. The University of Calgary has started building a new observatory south of the city that will house one of Canada's largest telescopes. Public lectures by NASA's Dr. S. Moran discussing Halley's Comet and by Dr. John Eddy discussing North American archaeoastronomy were well advertised and well received. The Centennial Planetarium and Pleiades Theatre Society has recently been formed to oversee and improve the direction taken by the Planetarium, and the new Calgary Society for Science and Technology is developing rapidly and may be successful very soon in establishing a first-class Science Centre in the city. This has been a banner year for science and astronomy in Calgary.

The Centre meetings were:

- January 20 Annual meeting; S. Morris, "Setting Circles"; D. Hladiuk, "What's New in '82".
- January 29 Official opening of the Wilson Coulee Observatory.
- February 17 D. Scarlett, "Habitable Worlds".
- March 17 P. Goosens, Youth Department, "The European Space Agency".
- April 21 F. Loehde, "The Edmonton Space Sciences Centre".
- May 19 Dr. D. Leahy, University of Calgary, "X-Ray Astronomy".
- June 16 Dr. E. Anderson, University of Calgary, "Positional Astronomy in Surveying and Engineering".
- August 12 Annual Barbeque, Wilson Coulee Observatory.
- September 15 S. Morris, University of Calgary, "The FK Comae Stars".
- October 20 C. Treleaven, "Collecting Astronomy Books".
- November 17 J. Powell, "Project Daedalus and Interstellar Flight".
- December 9 Annual Banquet. Dr. A. Batten, "The Canada-France-Hawaii Telescope".

S.L. MORRIS, *Recorder*

EDMONTON CENTRE

A highlight at the beginning of the 1983 season was the presentation of three Edmonton Centre awards.

1. The Astrophotography Award went to Bryce Heartwell for his first rate astrophotographs which were displayed in slide format for viewing at one of our meetings.
2. The Angus Smith Award for telescope making was presented to six of our Centre's members: Theodore Cadien, David Beale, Alan Dyer, Craig Makarowski, Robert Marten and Stewart Krysko. These members were instrumental in building a seventeen and one-half inch Dobsonian Telescope. This was a job very well done. The telescope was used on STARNIGHTS for public viewing.

3. The President's Award was presented to Dr. Douglas P. Hube for his outstanding service in the fields of astronomy and allied sciences.

During the month of April two evenings were planned to hold STARNIGHTS. These were held on the grounds of the Coronation Park. The two events were very capably organized by Craig Makarowski. Members lent their telescopes and assistance which, along with good weather, helped these observing sessions to be successful and attracted a large public attendance.

Many of our members have been active this year in regard to the Donate a Star Program displays at the Edmonton Coliseum and at many Edmonton shopping centres. These displays were held in order to promote contributions toward the completion of the Edmonton Space Sciences Centre.

Our National Council Representative, Mel C. Rankin, attended the National Council meeting during the General Assembly held in Quebec City. Our Centre presented a bid to host the 1985 General Assembly. This was accepted and soon after, committees were set up and members were called upon to lend their support in the planning of the assembly. We are looking forward to meeting visitors coming to our "Wild Rose Country" here in the West when they come to attend the General Assembly in the summer of 1985.

During the month of June our Centre's president Anthony Whyte and his wife Annie, made a long and exciting trip to Indonesia to observe the total eclipse of the sun! Many beautiful pictures were taken and were shown at our September meeting when Anthony gave a talk about their experiences.

In September at the National Council meeting in Toronto, seven of our Centre's members were awarded Membership Certificates: Theodore Cadien, Alan Dyer, Yni Ebbers, Robert King, Stewart Krysko, Craig Makarowski and Mel Rankin.

The staff of the Queen Elizabeth Planetarium has moved to the new facilities in the Edmonton Space Sciences Centre. The Queen Elizabeth Planetarium closed its doors to the public on the 31st of December of this year. After renovations the planetarium will be used for special programming, possibly within a year's time.

In regard to the publication STARDUST, the editor Alan Dyer has again done an excellent job of rolling issues off the press every two months which provided comprehensive coverage of RASC activities, astronomical events and observing reports.

Our Centre has held its regular meetings in the music room of the Edmonton Public Library until May of this year. In September we were able to hold our first regular meeting in the brand new classroom of the Edmonton Space Sciences Centre.

Six council meetings and nine regular meetings were held this year. The speakers and the topics presented at the regular meetings were:

- January 10 Alan Dyer, STARDUST editor and the Queen Elizabeth Planetarium's executive producer, "The Comet Returns – Halley's Comet"
- February 14 Mike Wesolowski, exchange speaker and president of the Saskatoon Centre, "The Many Ends of the Universe"
- March 14 John Hault, curator of the Edmonton Space Sciences Centre and staff members of the Queen Elizabeth Planetarium conducted tours for several groups of visitors through the new Space Centre.
- April 11 Neil Laffra, exchange speaker – Calgary Centre, "Calgary Centre's New Wilson Coulee Observatory"
- May 9 Dr. David Routledge: University of Alberta, "Radio Astronomy and the 300 year old Supernova Remnant in Cassiopeia A"
- June 18 Observing session and picnic to be held at the Ellerslie Observatory was cancelled due to rain.
- September 12 Anthony Whyte, Edmonton Centre President, "The Total Eclipse of the Sun – In Indonesia"
- October 17 David Holmgren, Edmonton Centre member, "Binary and Multiple Star Systems"
- November 14 Father Lucien Kemble, Calgary Centre member, "Science and Faith – Convergent Paths to Truth"
- December 12 Marten Beech – University of Sussex, "The Nature of Wolf-Rayet Stars"

HALIFAX CENTRE

The Halifax Centre continues to have another active year. This year under the leadership of Kathy Oakley, our President, we had ten regular meetings along with a Centre Dinner, Observing Session, an Astronomy Day in both Halifax and Bridgewater and a Camp Observing Weekend at Dr. William Holden's home and cottage at Trout Lake.

This year Peter Steffin has again done an excellent job as editor of our *Nova Notes*, the Centre's bimonthly publication. These issues provided us with comprehensive coverage of astronomical happenings both locally and throughout the universe.

The following were the speakers and topics presented by the Halifax Centre in 1983.

- January Dr Vincent Audain, "The structure of the Eye and its Diseases"
- February Dr Larry Bogan, "A personal glimpse of New Zealand and the Celestial Sphere from Down Under"
- March Randall Brooks, "History of Astronomy in Nova Scotia"; Walter Zukauskas, "History of the Halifax Centre"
- April Dr Ken Dunn, "Black Holes and Big Bang Cosmology"; Astronomy Day in Halifax
- May Annual Dinner with presentation of the Burke-Gaffney Award to Jennifer Wells and slide presentations.
Observing Session at Shubie Park for the Dartmouth Parks and Recreation Dept.
- June Graham Millar, "Babylonian Astronomy"
- July Astronomy Day in Bridgewater
- August Camp out Weekend at Dr. Holden's; Perseid Meteor Shower
- September Laurie Burgoyne- personal slide presentation about Lowell Observatory in Flagstaff, Arizona where Laurie spent part of her summer.
- October Hugh Millward, "The L5 Society"
- November Cathy McLeod, "The Christmas Star"
"Trivial" Astronomy conducted by Randall Brooks
- December Terry Danks, "Globular Clusters"

WILFRED MORLEY, *Secretary*

HAMILTON CENTRE

The Hamilton Centre's activities were slightly down in 1983, possibly due to the dark economic cloud that has been hanging over the city recently. Nonetheless, there were still many notable events last year.

Our Monthly General Meetings which were held at McMaster University, included a main speaker, various observing reports, and often, examples of astrophotography.

The following are highlights from those meetings.

- January Annual General Meeting; Arthur Dobos (McMaster University) "A Philosophical Background of Early Astronomy"
- February B. Ralph Chou (Toronto Centre) "Visual Mechanisms and the Astronomical Observer"
- March Dr. John Percy (University of Toronto) "The Travelling Astronomer"
- April Douglas L. Welch (University of Toronto) "Infrared Photometry of Classical Cepheids"
- May Rev. Norman Green (Hamilton Centre) "Planet Earth - A History"
- June James A. Winger (Hamilton Centre) "President's Night"
- October Hamilton Centre's Photographers "Photo Night"
- November Daniel Wentworth (Hamilton B. of Ed.) "Astronomy Education in our Schools"
- December Peter Ashenhurst (Hamilton Centre) "Astronomy in Hungary"

In addition to these meetings, many impromptu meetings were held at our observatory in Flamborough.

Our observatory remained open to the public every first and last Friday of the month throughout the year. This was due largely to the fine efforts of Grant Dixon, Ian Stuart, Bert Rhebergen and most of the Board of Directors who all got a chance at making sure the public nights were successful.

Throughout the year we have had to deal with many problems with the Hamilton Centre's newsletter 'Orbit'. Higher postage costs, printing costs and the unfortunate loss of a fine editor, Ian Stuart, were just some of the difficulties. But now with a new editor, a reduction of publication to bi-monthly and a new off-set printing method, it is hoped that our problems are behind us and *Orbit* will once again be the Gem you have grown to expect.

Early in the year it was seen by many the necessity and wisdom of a new building for the Centre's many telescopes. On this, we were very fortunate, thanks mainly to Vice President John Kiss for procuring a grant for the new building from Shell Oil Company of Canada. The building will be a four bay rolloff roof and construction is now ready to begin sometime in May '84.

It is also hoped that by G.A. time the 17" telescope will have been mounted and ready for use. Our 17" project was also honoured by a generous donation from the Spencer Valley High School, Dundas. This money was used for the purchase of an 18 point mirror cell and diagonal plus holder.

Sadly in August we were struck with the loss of one of our active members, Ed Benner, who will be sorely missed by many, especially those who frequented the observatory.

Now that there is once again a new enthusiasm returning to the group, we shall be further inspired by the work we have laid out for us.

I am sure the Hamilton-Niagara G.A. will go off without a hitch, and we are looking forward to seeing you here.

ROBIN ALLEN, *Secretary*

KINGSTON CENTRE

Once again the year 1983 has seen a flurry of activities and some outstanding accomplishments for the Kingston Centre and its members.

We welcomed David Stokes home from Texas, Pakistan and Great Britain. He reported his visits to the British Astronomical Association in London.

Leo Enright, as catalyst, has reinstated the Sky Search Program at our Centre and also continues to produce *Regulus*, the Kingston Centre's newsletter. Leo observed an extraordinarily bright meteor on February 8 which was also reported by the news media throughout southeastern Ontario.

Our March 11 meeting was a tribute to Dr. A.S. Eddington, noted astronomer of our century. This was the occasion of the centennial of his birth. Our guest speaker was Dr. John Coleman of Queen's University who gave a review of some of Dr. Eddington's work. Also in attendance at this meeting was our Centre's Honorary President, Dr. A.V. Douglas, author of *The Life of Arthur S. Eddington*.

We are delighted to report that two Kingston members received their Messier Certificates, Gus Johnson and Jim Scotti. Also our secretary Gerald Schieven has been awarded a Membership Certificate.

International Astronomy Day, April 23, was a success at our Centre with wide public support for the displays at a local shopping mall and the public star night at the city park.

Members from the Toronto Centre joined Kingston members for an excursion to the Holleford Crater northwest of Kingston. Leading and guiding was our President Terry Hicks and Mrs. Ruth Hicks.

The Centre had an observation session at Terence Dickinson's dark sight where Steve Dodson set up his home-built twenty-two inch telescope.

This year, Kingston had a record of eleven members attending the general assembly in Quebec.

David Levy, amateur astronomer in Tucson Arizona, member of Kingston Centre, has many tremendous achievements to his credit and this year has been no exception. On the night of March 15/16 he viewed and recorded 109 Messier objects in one evening's observing session. It is also with great pleasure that we report David's independent discovery of a comet at 3.15 U.T, 30 November 1983 with a visual magnitude 12.5! Congratulations David.

It is appropriate to mention thank you to Gerald Schieven for his efforts and interesting secretarial recordings of our meetings in 1983. Good Luck Gerald in your studies!

This is a summation of our meetings. Various members of our Centre took part in our evening presentations, as follows:

- a. Leo Enright, Astrophotos, Modes of Astrophotography, Libration of the Moon, Locating Beales Crater.
- b. Gerald Schieven, "The Hidden Universe", Tides and Rainbows.
- c. Martyn McConnell and Leo Enright, General Assembly and travelogue.
- d. Tim Gladwin, Scopes and Observatories made from Scrap Material.
- e. Mark Sorensen, Meteorite Craters of the Canadian Shield.
- f. Youth Member Hugh Thompson, The Speed of Light.
- g. Klaus R. Brasch, Astronomical sights in southwest USA with a C-10.
- h. David Stokes, Slides on Mont Mégantic and Video Computer Uses.
- i. Jocelyn Boily, Radio Waves from Nebula, Galaxies and Quasars.

Special Guest Speakers:

1. Dr. John Coleman, *Eddington: Astronomer and Theoretical Physicist*.
2. Peter Jedicke, (London Centre), Infrared Astronomy-IRAS.
3. David Levy, (Tucson, Arizona), My Comet Hunting Programme.
4. Angelika Hackett, Astronomical and other Marvels of the West.

SUE KNIGHT SORENSEN, *Secretary*

KITCHENER-WATERLOO CENTRE

During 1983 formal meetings were held every 2nd Tuesday at Wilfrid Laurier University. Over the course of the year we arranged tours of our observatory and held public "star nites". Our club also organized a mall display to coincide with Astronomy Day. Club members were also involved in giving talks to various scouting and school groups in 1983.

While we lost several members, primarily due to their moving out of the Kitchener area, we still have maintained a dedicated core of members to carry out the goals of the Centre.

We are planning an active 1984 programme, which will involve more public star nights and more mall displays. All this is an effort to increase public awareness and interest in astronomy in the area which we serve. It is also hoped that these activities will be a good source of new members for the Centre.

Our programme for 1983 was as follows:

January	Annual meeting
February	Phillip Forsyth – Astronomy in New Zealand.
March	Rob Robotham – Observing variable stars.
April	Peter Daniels – Astrophotography. Astronomy Day – Mall display.
May	Ray Koenig – Formation of the solar system Part 1
June	Ray Koenig – Formation of the solar system Part 2 Dave Schwartz – Amateur Photometry
July & August	Summer Break, no meetings held
September	Gerald Kennedy – Astrophotography with a C-14
October	Rob Robotham – Observing Planets
November	Ray Koenig – Understanding eclipses
December	Xmas dinner meeting

GEORGE M. MUDRY, *Secretary*

LA SOCIÉTÉ D'ASTRONOMIE DE MONTRÉAL

Au 31 août 1983 la Société d'Astronomie de Montréal avait quelque 280 membres dont un sous-ensemble de 33 qui étaient aussi membres de la Société Royale d'Astronomie du Canada. L'année 1983 a été une année de réorganisation pour la SAM. Le secrétariat fut déménagé en septembre. Les conférences mensuelles ont lieu depuis octobre au Planétarium Dow de la ville de Montréal le premier mardi du mois.

Tous les autres mardis, des causeries sont données au Centre de Loisirs St-Mathieu. Le programme des conférences de cette année était le suivant:

- 4 janvier Dr. Gilles Beaudet, L'abondance des éléments à la surface des étoiles
- 1 février Dr. Jean-Louis Tassoul, La rotation des étoiles
- 5 avril Dr. Pierre Couillard, La vie extraterrestre
- 10 mai Dr. Serge Demers, L'analyse de plaques photographiques
- 7 juin Dr. John Glaspey, Starlab
- 5 juillet Dr. Jean-Louis Tassoul, La masse des étoiles
- 2 août Dr. Gilles Fontaine, Distances et dimensions en astronomie
- 6 septembre Dr. Daniel Nadeau, Les nuages interstellaires
- 4 octobre Dr. Gilles Beaudet, L'évolution des étoiles doubles
- 1 novembre Dr. Georges Michaud, L'abondance des éléments dans les étoiles
- 6 décembre Dr. Pierre Bastien, Le retour de la comète Halley.

Le comité des expositions a présenté un kiosque pour faire connaître la SAM au public à trois reprises durant l'année, et en plus lors du congrès triple AGAA-SRAC-AAVSO à Québec en mai 1983. Le concours annuel des fabricants de télescopes amateurs (CAFTA) a connu un autre succès pour la cinquième année consécutive avec plus de 40 exposants et une assistance d'environ 300 personnes du Québec et même de l'Ontario. L'Annuaire Astronomique de l'Amateur est paru en retard en mai 1983, mais celui de 1984 a été profondément remanié et mis à jour et est sorti en décembre 1983! Le nombre des collaborateurs a plus que doublé en un an. L'électricité a été installée au chalet de l'Observatoire, à St-Valérien de Milton. Le revêtement extérieur du chalet a été complété. L'électricité sera installée à la tour de l'Observatoire au printemps 1984 et d'autres travaux suivront.

PIERRE BASTIEN, *Président*

MONTREAL CENTRE

Once again in 1983 the Montreal Centre enjoyed a fairly active year in the observational field. Over the course of the year, members ventured out to Cedar Crest on 16 clear nights, and out of these expeditions five auroras were observed – two of the extraordinary type. One occurred on June 11th when this grand display reached to –20 degrees declination. The second was on the night after Stellafane, Aug. 6th, when a most incredible corona literally lit up the sky. At eleven o'clock as I was watching a bright band of light stretching from southwest to northeast, a circular corona formed overhead and showed many different colors of the rainbow. It was unusual to see such great detail in the form of tiny needle-like spikes completely circle the corona. Some of my shots were over-exposed with only a five second exposure.

On the Astronomy Day weekend we set up a display at Fairview Mall in Pointe-Claire. Various telescopes were set up, some belonging to Montreal Centre and others to the members. Viewing was done on Friday and Saturday nights, and by day an H-alpha filter was coupled to a C-8 telescope to safely show our closest star. Gordon Lorimer's 2.4 inch refractor was also set up to show how eyepiece projection worked. Slides of the Voyager encounter as well as slides of deep sky and aurora (which we took at Cedar Crest) were constantly displayed on a screen. The Centre's four-inch refractor was also exhibited indoors by day and focused on a light bulb at a distance of about fifty yards. The dust particles and spider web showed up quite well.

Another great observing event and clearly THE event of the year was the arrival of Comet IRAS-ARAKI-ALCOCK. Some thirteen members drove to Cedar Crest on the night of May 11–12 to glimpse and photograph this mighty snowball of the sky. The heavens were clear in the country but Montreal received rain; the lightning was clearly visible at eighty miles. Four members travelled to I.R.O. (Ottawa Centre's Observatory) to view the Perseids and use the mighty scope.

Speaking of scopes, the Montreal Centre recently completed their twenty-inch f/3.9 mirror. It was aluminized and is now waiting for the telescope structure to be finished. I have also finished constructing my twelve-inch f/4 Dobsonian, so this scope is also used at Cedar Crest. We have only found a few globular clusters in M31 with it.

Our Centre was also proud to present Messier Certificates to three members: Alister Ling, Enrico Kindl, and Gary Boyle.

Stellafane had another great turnout by our Centre, about fifteen of us. Alister Ling gave a slide presentation during the tent talks on aurora, solar pillars, rainbows, and sun dogs.

Again this year the Dow Planetarium played host to many lectures and movies. Most of the speakers were from the University of Montreal and Mont Mégantic observatory. On Feb. 28th Mr. L.A. Keyes from SPAR Aerospace spoke about the Anik satellite system.

As we pack our 1983 Handbooks away, and remember all the great events which we observed and didn't observe such as the Pallas asteroid occultation which was a total flop, we prepare ourselves for the 1984 observing program, to be highlighted by the Annular eclipse of the sun in May. Let's hope that clear sky will prevail.

GARY BOYLE, *Secretary*

NIAGARA CENTRE

The Centre held its Annual Meeting and 7 regular meetings at the Niagara Falls Centennial Library, as well as the Spring and Fall Banquets at the Skylon, and organised a trip to the McLaughlin Planetarium for members.

- January 27 Annual Meeting; Speaker: Al Kindy, "Our Historical Astronomical Heritage".
- February 24 Shaun Hardy (Lockport N.Y.), "Classification and Origins of Meteorites".
- March 24 P. Jedicke (London), "The IRAS Satellite".
- April 8 Spring Banquet; Guest speaker: Dr. J. Mack (Buffalo), "The Quest for Black Holes".
- April 22 Trip to the McLaughlin Planetarium.
- May 26 Movie "The Solar System", and slides from members.
- September 22 Cynthia Skinner: Slices from the June Solar Eclipse on Java. Debbie and Charles Fassel: Report on Stellafane '83.
- October 27 P. Jedicke, "Life, the Universe and Everything".
- November 5 Fall Banquet and NFCAA Fall Meeting; guest Speaker: Dr. J. Percy, "Two hundred years of Variable Stars".
- November 24 Film Night; "The Road to Mauna Kea", "Space Born" and "Interplanetary Space" were shown.
- December 22 Dr. John Black, "An Astronomer on Safari in Africa", followed by a slide show on Southern Constellations.

The Observers' Group held 11 successful Observation meetings, mostly called on the day itself, when the sky promised to be clear, with anywhere from 4 to 20 participants.

In addition, six public displays and Star Nights were held in Shopping Malls in the Niagara Region and in John Allen Park in Niagara Falls. One of the displays was by invitation from the Niagara Volunteer Bureau as part of their Hobbies and Crafts Show.

In June, 4 telescopes were set up by members on the parking lot of Short Hills Provincial Park for the students of Maplewood School who spent a week in the Boy Scout Camp in the nearby valley.

In October, several members supplied telescopes and operators to assist Dr. Black of Brock University with two Star Nights for his Astronomy classes.

The Board of Directors held 5 meetings during the year, one of which was almost entirely devoted to the Centre's participation in organising the 1984 General assembly weekend. Four joint meetings with the Hamilton Centre's G.A. committee were held, alternating location between St. Catharines and Burlington.

The present membership of the Centre is 53, including 2 Life Members.

W. JUTTING, *Secretary*

OTTAWA CENTRE

Membership In 1983 the Ottawa Centre had 167 members including 34 life members. This compares with 179 of which 32 were life members in 1982 and a total of 237 in 1981. The Centre had one representative on the National Council.

Public Meetings Events sponsored by the Council during the year included a very interesting talk by Professor Preston Cloud of the University of California, Santa Barbara. The topic was Planetary Evolution: A Terrestrial Perspective. The latest findings from continuing studies of Voyager Data was the subject of a talk given by Dr. Allan Cook of the Jet Propulsion Laboratory, at Pasadena, California. Dr. Cook explained that one of the most exciting of the discoveries is the recognition of a class of short-lived volcanoes on Io driven by sulphur at high temperatures along with the common long-lived ones driven by sulphur dioxide. Another is the discovery of current water vapour driven volcanoes on Europa.

General The Ottawa Centre Council held four meetings during the year. With the Centre's finances in better shape than a year ago, a major subject that was addressed was how to use the Centre's resources to better serve the members and attract new members. Some of the initiatives that were taken included holding "regional" public star parties in different parts of the city, awarding a prize for the best article of the year in *Astronotes*, circulating information sheets to high schools in the Ottawa area, and upgrading the Centre's publicity activities.

Ten Ottawa Centre members attended the General Assembly held in Quebec City. Frank Roy and Jim Hayes won first prize in the Radio Astronomy category with their display of results achieved on the radio interferometer. Peter Ryback presented a paper on "Astronomy in Senior High School" and Peter Millman gave one on "The Chemistry and Physics of Comet Halley Fragments". The Service award went to Dr. Lloyd Higgs, former president of the Ottawa Centre. Two prizes were won by Ottawa Centre members at the 49th annual Stellafane Convention of amateur telescope makers in Springfield, Vermont: Steve Dodson for the drive mechanism on his 56cm trailer-mounted telescope and Max Stewart for his beautiful 15cm Dobsonian crafted out of mahogany.

The Annual Dinner Meeting was held in the Skyline Hotel on November 25. Awards were presented by Dr. Peter Millman. Observer of the Year Award was won by Sandra Thuesen and Robin Molson was presented with the Merit Award. Dr. Andrew Woodsworth gave a very interesting talk on Computers in Astronomy and illustrated it with some superb colour slides of computer-made outlines of radio galaxies, a supernova remnant, M-51, the Head-tail galaxy and some other objects.

Ken Tapping was interviewed by Margaret Trudeau for her program "Morning Magazine" on CJOH-TV. The subject was Star Colours. Our president, Peter MacKinnon, conducted a reporter and a photographer from the Sunday Herald on a tour of the IRO Observatory in connection with a major article on amateur astronomy in the Ottawa area.

The Centre gratefully acknowledges a gift of books from the collection of Miriam Burland. The Centre also sincerely thanks all those members who made sustaining donations. As indicated in the financial statements these were a major factor in improving our financial position.

Observers' Group One of the principal activities of the Ottawa Centre are the monthly meetings organised by the Observers' Group executive under its chairman, Rolf Meier. These are held in the National Research Council building on Sussex Drive and are very popular judging by the usually large attendance. Some of the highlights of these meetings during the year were an illustrated account by our roving eclipse watcher, Patrick Brewer, of the solar eclipse of June 11 in Indonesia, displays of telescopes and associated instrumentation designed and/or constructed by members, shows of coloured slides taken by members, and accounts of successful grazing occultation expeditions by Brian Burke. In addition talks were given by members on a variety of subjects such as astrophotography, meteors, nebular filters, and comets and in particular IRAS-Araki-Alcock.

The Observers' Group executive drafted a set of guidelines to formalize the roles and functions of co-ordinators. These were adopted by the Council and resulted in the first four regional star parties managed by the Observers' Group in May, June, August and October. A fifth scheduled night was clouded out. Instrumentation co-ordinator, Malcolm Lambourne, very kindly made his basement and power tools available to members and supervised regular telescope making workshops during the year. At least one member began and completed a telescope thanks to his guidance.

Indian River Observatory Unusually mild weather and light snowfall permitted uninterrupted access by car to the Observatory throughout the winter. Snow ploughing was unnecessary. However, the warm weather also brought overcast skies so that observing activity was reduced during the first five months of the year. This abruptly changed in June when one of the hottest and driest summers on record made its debut. The number of observers visiting the Observatory rose dramatically and so did the number of mosquitoes that were lined up to greet them. Fortunately the rapid drying up of swamps and reduction in water levels of lakes and streams quickly reduced the breeding grounds of the winged monsters and observers enjoyed a good summer though the extreme heat adversely affected the seeing at times. The Deep Sky Week End, October 8–10, had excellent seeing conditions and was well attended.

To partially offset higher costs of operating and maintaining the Observatory, keyholder fees were increased from \$20 to \$25 including a \$1 refundable key deposit. There were 17 keyholders in 1983.

Changes to the 40cm telescope included the removal of the aero-ektar, relocation of the guide scope and adjustment of the counterweights. This considerably lightened the instrument and made it much simpler to put into operation. Some improvements were carried out to the digital read-out system. Only minor maintenance on the Club house building was required in 1983.

During the year, development was continued on the Radio Telescope. Tests established that the sensitivity of the instrument was significantly degraded by the use of inferior hybrids in the antennas. New ones were designed and built and then tested on the West Antenna. Performance was greatly improved so hybrids were also constructed for the East Antenna. During the summer a nearby lightning strike damaged the electronics. Repairs took about a month.

Considerable progress was made towards installing another telescope at the Observatory. A 25cm, F4.5 Newtonian, built by Rolf Meier and equipped with a German equatorial mount, 2" axles and a clock drive was mounted on a pier a short distance from the main Observatory. A small steel storage shed was temporarily installed to protect it.

C.R. MOLSON, *Secretary*

CENTRE DE QUÉBEC DE LA S.R.A.C.

L'année 1983 fut marquée par la tenue du congrès conjoint international S.R.A.C. – A.G.A.A. – A.A.V.S.O. du 19–23 mai. Ce fut un grand succès, au-delà de 300 participants y ont assisté. Nous n'en ferons pas la description ici, mentionnons seulement que le conférencier invité lors du banquet n'était nul autre que le Pr. Hubert Reeves et que le titre de sa conférence était *La flèche du temps en astronomie* (20 mai 1983).

L'Almanach graphique 1983 a été publié avec l'aide d'une subvention de \$650. de la S.R.A.C. (Ruth Northcott Fund).

CONFÉRENCES 1983.

19 janvier *Réflexions sur la vie extraterrestre.*

Conférencier invité: M. Damien Lemay, B.Sc., ingénieur physicien de Québec
Téléphone à Rimouski.

16 février *Les trous noirs: solution finale à la crise énergétique en astrophysique?*

Conférencier invité: M. Serge Pineault, Ph.D., chercheur au département de physique de l'Université Laval.

9 mars *Les galaxies particulières.*

Conférencier invité: M. Jeffrey Edwards, M.Sc., étudiant au doctorat en astrophysique à l'Université Laval.

13 avril *Découverte de la nature des galaxies.*

Conférencier invité: M. Robin Arsenault, M.Sc., étudiant au doctorat en astrophysique à l'Université Laval.

21 septembre Soirée de réalisations des membres.

2 novembre *Traitement informatique des images en astronomie.*

Conférencier invité: M. Jean-François Lallier, M.Sc., analyste de l'informatique à l'Université Laval.

23 novembre *Les observatoires de Québec.*

Conférencier invité: M. Paul Darisse, arpenteur géomètre et membre du conseil d'administration du Centre de Québec de la S.R.A.C.

SOIRÉES D'OBSERVATION

- 11 février Observatoire du Collège de Lévis à St-Nérée de Bellechasse. 10 personnes étaient présentes. Il y eut observation d'une douzaine d'objets. Les conditions d'observation ont été bonnes jusqu'à 21h.30.
- 9 avril Observatoire du Collège de Lévis à St-Nérée de Bellechasse. Les conditions d'observation étaient excellentes. Etant donné que deux télescopes étaient disponibles, 22 objets dont Saturne ont été observés par les huit personnes présentes.
- 12 août Observatoire de l'Université Laval à St-Elzéar. Les 40 personnes présentes ont pu admirer les Perséides et utiliser le télescope de 16 pouces.
- 7 octobre Observatoire du Collège de Lévis à St-Nérée de Bellechasse. 20 personnes y assistaient. 5 objets ont été observés. Les conditions d'observation ont été bonnes jusqu'à 20h.30.
- 2 décembre Observatoire du Collège de Lévis à St-Nérée de Bellechasse. 7 objets ont pu être observés par les 15 personnes présentes. Le froid excessif a causé certains inconvénients.

ANITA POULIN, *Conseiller*

ST. JOHN'S CENTRE

This year saw the membership of the Society increase by three and members of the Society were giving talks on various subjects relating to astronomy. Mr. Tony Quilty and Mr. Randy Dodge have been appearing on CBC radio and television from time to time talking about astronomical events and promoting the Society.

Astronomy Day this year was on April 23 and our Centre had a display set up at the Village Mall. Films were shown, posters and telescopes were displayed, and information about The Royal Astronomical Society of Canada was distributed. While the display did not yield much in terms of membership, the Centre did get much needed exposure to the public.

Due to various problems, we were not able to make any shows for cable television this past year but hopefully we will be able to produce more shows in the coming year.

In October last year ('82), it was suggested by Mr. Gary Dymond that we become incorporated. The reasons for doing this are 1) being incorporated would eliminate the liability on the executive and 2) it would be easier to obtain land for a small observatory. As of this time, we are not incorporated but it appears that we will be before the end of the year.

As far as observing goes, there were not many group-observing sessions this year. Recently, however, three members got up early in the morning to attempt to observe an occultation of a star by an asteroid. We did not see the event but the night was not a total loss because it was a beautiful night without clouds or light pollution.

Also in September, we got together as a group to observe an occultation of Jupiter by the moon. Unfortunately, we were about three hours too late.

1984 looks to be more promising than 1983. When we become incorporated, we should be able to acquire a piece of land on which to build a small observatory. Also we are looking forward to seeing new members and present members become more involved. This year should also see the return of our television show to cable T.V.

For 1984, HAPPY OBSERVING.

PETER ALLSTON, *President*

SARNIA CENTRE

The past year has, in retrospect, shown itself to be a promising year as far as continued existence of the Sarnia Centre is concerned. Although the Centre Newsletter, URANIA, was temporarily out of production, I am pleased to note that URANIA has, in the latter part of 1983, returned to publication.

A very successful star night was held which included the sale of a Rich-field Schmidt Newtonian reflector. Centre members have strengthened their ties with other Centres in south-western Ontario by attending and participating in their respective meetings and activities and have welcomed members of those Centres as guest speakers at our own meetings. Trips to the Indonesian Solar Eclipse, Stellafane, Starfest, Astrofest and the Windsor Centre Open House were also enjoyed.

MICHAEL D. MARCHAND, *Secretary*

SASKATOON CENTRE

By the time 1983 rolled around the Centre had recovered from holding the G. A. Things around here were starting to get back to normal with work resuming on the sixteen-inch mirror and telescope, as well as some members getting back to observation programs and photography.

For Astronomy Day a large display was set up in one of the local malls. The general public that stops to talk or ask questions seems to have a better general knowledge of the topic than three or four years ago. About twelve telescopes, a large photographic display and a lot of information was on hand beside a good number of members.

The Annual Public Star Nights were quite well attended even though the exhibition was on at the same time. Once again both nights were fairly clear until well past midnight. Some of the public came out about dusk and stayed the whole night, even helping some of the members to pack up. At least ten members were in attendance with as many telescopes, and the objects viewed included planets, the moon, the setting sun, stars and many NGC and Messier objects.

The Centre's annual outing for the Perseid Meteor Shower was not as well attended as was hoped. Those who did attend made some observations with telescopes, tried to photograph some of the meteors as well as just observing the shower. A large number of fairly bright meteors were seen as well as the more standard ones.

Four members of the Centre also made the trip to Mascon 83. Although the weather did not co-operate most who attended agree the time was enjoyable.

Clear Skies and Good Viewing.

LILLIA WILCOX, *Secretary*

TORONTO CENTRE

It is a pleasure to report on the activities of this Centre for the fifth time as Secretary of the Centre.

The past year has been a busy and fruitful one for members of the Toronto Centre. The General Assembly of the RASC at Quebec was attended by 21 members, 7 of whom contributed 5 display contest entries.

In a very competitive field, four of the displays won awards. We congratulate Jillian Buriak, Steven Chomniak, John and Lorraine Hicks, Walter MacDonald, Paul Markov and Scott Ramsay for their excellent work.

One of Toronto Centre's most distinguished members, Dr. Helen Hogg, was honoured at the Annual Meeting of the Astronomical Society of the Pacific. She received its prestigious Dorothea Klumpke-Roberts Award in recognition of her contributions to public education in astronomy through her weekly astronomy column which appeared in *The Toronto Star* for 30 years, and her book *The Stars Belong to Everyone*.

Eclipse expeditions once again occupied the attention of several members. In June, ten members travelled to Indonesia to observe the total solar eclipse. Jim Cobban, Tony Lopes and Michael Watson observed the event from sites on the north coast of Java, while Ralph Chou, Joyce Feinberg, David Foot,

Jim Gall, Bob May, Glenn Slover and Anne Waterhouse went inland to Salatiga. Despite inclement weather several days before the eclipse, all were able to observe a spectacular eclipse under clear skies. Two weeks later, a partial lunar eclipse was observed by members at widely separated sites – Sydney Australia, Tahiti, and Toronto.

The economic recession resulted in a small drop in our membership in the last year. Toronto Centre had 552 regular, 60 youth, 66 life and 50 associate members, for a total of 728, compared with 795 in 1982, a decrease of 8.4%. Membership Secretary Alia Alsharif has done an excellent job of handling renewals and inquiries, no mean feat when one considers the large numbers involved. Member services such as the *Directory of Observers* have been well received, and the supply of *The Joy of Gazing* written by David Levy of Kingston and Montreal Centres has rapidly sold out on several occasions.

It is with regret that we record the deaths of 3 members, Bruce Proctor, Henry C. Swabey and D.A. Malone in the past year.

Dr. Tom Bolton organised a very interesting and well attended series of lecture meetings. The programme was as follows:

- 1982 October 29 Dr. W. Harris: Globular clusters and distant elliptical galaxies
- November 26 Dr. T. Bolton: The Moon-post Apollo
- 1983 January 28 Dr. J. Crelinsten: A centennial look at Sir A.S. Eddington
- February 25 Mr. A. MacGregor: Canadian communications satellites
- March 25 Dr. L.A. Willson: Mira variables and the fate of the Sun
- April 22 Dr. M. Duncan: Galaxies in collision
- May 27 Dr. C. Corbally: The evolutionary status of southern close binary stars

We are again grateful to Dr. Fernie and the staff and students at the David Dunlap Observatory for their hospitality during the Annual Open House in September. Thanks are also due to Walter MacDonald and Scott Ramsay who ran the projectors, and Paul Gunter, Eric Gunter and Eric Galt who organised refreshments at the meetings.

The Observational Activities Committee under Ian McGregor held twelve Members Nights which featured brief presentations and special planetarium demonstrations. A tour of the Holleford meteor crater was arranged in July, and several members attended the Stellafane meeting in August. The planetarium sessions have been very useful for demonstrating various astronomical phenomena and observing techniques. The resulting increased observational activity has been reflected in the number of the observers' reports found in *'Scope* this year.

Under Editor Betty Robinson, *'Scope* continues to be an attractive interesting newsletter. More improvements are likely with the help of Vic Kennedy in typesetting with his computer, Steven Spinney as photographer and Walter MacDonald as assistant editor. A large group of volunteers has been most helpful in collating and mailing *'Scope*.

The Observatory Committee under Richard McWatters has had a busy year making improvements to the 12½-inch telescope, its shelter and the warm-up hut. There were 45 observing sessions during the year with nearly 150 participants. The Star Parties organised by John Perkins, Rick Francis and Bruce Waters were moderately successful, with only 8 of 17 possible dates having suitable weather conditions. The Centre Picnic on 10 September was held under clear skies, and many new members attended. There is room for greater use of the observatory facilities by the membership, as well as for more active keyholders. Further improvements are planned to increase the photographic capabilities of the main telescope, and a 10-inch Dobsonian instrument is near completion.

The Public Education Committee under Steven Spinney was active through the spring and summer. An Astronomy Day display was set up on 26 April by Neil Meirovich, Jamie Fougere, Paul Markov and David Rechtshaffen at Downsview Public Library. Mall displays were well attended at Bridlewood Mall on May 5 to 7, and at Bayview Village on July 28 to 30. Over 200 visitors viewed the moon and bright planets through telescopes set up on June 10 by Len Chester, Paul Markov, Steve Spinney and Ian McGregor at the Planetarium to commemorate the "departure" of Pioneer 10 from the solar system. Members were on hand with their telescopes at a special tour of the David Dunlap Observatory by North York summer science students on 13 July, and many members continued to set up telescopes at the DDO Saturday Public Nights during the summer and early fall. The Public Education programme ended with a talk on the solar system by Brian Beattie at Richview Library on 17 August. In addition, Astronomy Toronto returned for 5 monthly shows to the Rogers Cable-TV network from January to May, featuring a

phone-in show, and presentations on lunar and solar eclipses, the moon, and space exploration. A new series is in preparation.

The Optical Workshop continues to operate on Saturdays in the Planetarium basement under the leadership of John Morriss. The group is presently working on the observatory's Dobsonian telescope, but facilities are available to any member who wishes to make his/her own instrument, and requires instruction or equipment.

The Eclipse Expedition Committee has been reactivated with Michael Watson as Chairman. An expedition to observe the annular solar eclipse in the southeastern U.S. is being planned.

Two years ago, the Council gave its approval to an awards programme for participation in Centre activities which merited recognition, but did not qualify for the Society's awards such as the Membership or Messier Certificates. At the Annual Meeting, I unveiled the award plaques for this programme, which will be put on permanent display at the Planetarium. The first awards will be made at the next annual meeting.

Finally, I wish to recognise three members who are retiring from the Council: Deirdre DeClara, Rick Francis and Nonna Russ. In an organisation such as ours, we depend heavily on volunteers to make things happen, and I thank these members for their service on the Council on behalf of all members of the Centre. I also thank all members of the Centre who have helped to make the Secretary's duties much more easy and pleasant to carry out.

B.R. CHOU, *Secretary*

VANCOUVER CENTRE

10 Council meetings and 10 regular meetings were held in 1983. The annual dinner was held in February. Star parties were arranged each month either at Cypress Bowl Provincial Park or at the Langley site. Astronomy Day, April 23, was held at Britannia Secondary School. Over 900 people attended the Perseid Meteor Watch at Cypress Bowl on August 12, due to excellent weather and good publicity.

The Centre continued to use the auditorium of the Vancouver Museum for regular meetings and thanks to our President, David Dodge, who is also Director of the Gordon Southam Observatory, we continued to use the lecture room for all council meetings, for the coffee hour after regular meetings, and the observatory for members' only observing nights.

Through the courtesy of David Hurd, Director of the H.R. McMillan Planetarium, members were invited to attend three Planetarium shows.

4 members travelled to Indonesia for the June 11 eclipse of the sun.

- January 11 Presidential address by David Dodge
- February 8 Dr. M. Pim Fitzgerald, Dominion Astrophysical Observatory, "Greek astronomers and how they perceived the solar system."
- February 11 Annual dinner meeting: Dr. Paul Hodge, University of Washington, "The Anatomy and Biology of Andromeda."
- March 8 Planetarium show: "Charting the Kosmos."
- April 12 Dr. David Crampton, DAO, "LMC x 3," X-ray source in the Large Magellanic Cloud.
- April 23 Astronomy Day
- May 10 Report on Astronomy Day with slides and films.
- June 14 Members' night: Mrs. Zorgo, "Moving Tides," Mal Corey, "Rotating Domes," Ken Hewitt-White, "Pioneer passage."
- September 13 Planetarium show: "The Universe Effect."
- October 11 Report on the General Assembly, Karl Miller.
Occultation observations, Art Holmes.
The eclipse of the sun in Indonesia, Sally Baker, Ian McLennan, Eric Dunn.
- November 8 Leigh Palmer, "Let's get out and look at the sky."
- December 13 Election of officers. Planetarium show: "The strange world of U.F.Os".

SALLY BAKER, *Secretary*

VICTORIA CENTRE

1982–83 has continued the tradition of increased activities and membership totals that became apparent in the previous year. Membership total at the year end was 119, slightly below last year's 121, but still some 25% higher than the Centre's historical norm of 80–100 members. A large part of the credit for this must be given to the Centre's extended and varied meetings, and to the presence of our now operational 0.5 metre (20") mobile telescope. The Mobile Telescope formed the feature attraction for an RASC display at two major expositions held in Victoria during the spring of 1983. The Victoria Hobby Show and the Better Living Show both helped to increase awareness of the Centre's activities to the populace at large, with the result that we have been able to maintain our record breaking membership totals. 1983–84 is showing even greater promise. Ten regular monthly meetings were held in 1982–83, as well as several star parties. Our regular meetings were:

- September 14 A film show featuring the Apollo 17 Lunar Mission and the STS-1 Orbital Flight Test of the Space Shuttle.
- October 12 Our Annual Dinner and Meeting held at the Norway House. Our featured speaker was Mr. Chris Aikman, Past Centre secretary who recounted a recent trip to Greece in his talk: "Stars Over the Aegean – A 3000 year Legacy".
- November 10 "Satellite Oceanography" by Dr. Jim Gower, of the Institute of Ocean Sciences.
- December 8 "Astrophotography" by Jack Newton
- January 12 "Probing the Edge of the Milky Way", by Dr. Pim Fitzgerald a visiting scientist to the Dominion Astrophysical Observatory, Victoria.
- February 9 "Binary Stars", by Dr. Colin Scarfe, University of Victoria.
- March 9 "LMC-3: The Newest Black Hole", Dr. David Crampton, Dominion Astrophysical Observatory.
- April 13 "Ex Luna Scientia", a talk on Lunar Geology by Centre member Philip Stooke.
- May 11 "Astronomy 1851 Illustrated", a historical talk using 1851 astronomy slides and teaching devices by Centre treasurer Muriel Enock.
- June 8 Members Night with various contributions.

TIM LOMAS, *Secretary*

WINDSOR CENTRE

The year 1983 was one of the most active periods in the history of the Windsor Centre. The Awards Committee was re-organized in February, and an Observatory Research Committee was established to examine the possibility of constructing an Observatory for the Windsor Centre. In the meantime, our Centre is operating the St. Clair College Observatory. The Windsor Centre with Henry Lee as our representative, has been active on the City of Windsor's Science Research Committee.

Our President has made extensive contacts with the Sarnia Centre, the Chatham/Kent Astronomy Club, the Lowbrow's and the Detroit Astronomical Society. As a result, a speaker exchange program has been established. Since the exchange program has worked out so well, our President intends to expand it to other groups and Centres. Members of the Windsor Centre attended the annual February Lowbrow "Freeze Out" Astronomy Conference in Ann Arbor Michigan. Randy Groundwater attended the 49th annual "Stellafane" in Vermont.

The most important event of the year was our spectacular May Day Astronomy Party held on June 4th, (postponed from May 7th because of the weather). Special recognition must go to Patrick and Jean Langan for hosting the May Day Outing and providing refreshments. Another Summer observing program was established for July and August at Wheatly Provincial Park. On the evening of October 8th to the 9th, the Windsor Centre hosted an observing session at Wheatly Park. We were joined by members of the Detroit Astronomical Society and the Lowbrow's of Ann Arbor.

During the year, members of our Centre gave special presentations and public star nights at several schools in Windsor and Essex County. Several hundred students and parents attended these presentations.

The restoration of three of our Centre's telescopes was undertaken by several members. The construction of the 10" f/8 Dan Bawtenheimer telescope was completed by Randy Groundwater. Special thanks must go to National Council for a grant of \$338.36. Thanks must also go to Robert Bezeau, Nessim Abu-Zahra, Cyril Hallam, Hugh Cunningham, Randy Groundwater and St. Jean Baptiste School of Belle River for their generous donations towards the Bawtenheimer Telescope.

The Windsor Centre would like to thank our guest lecturers, Mr. Jack Brisbin and our National President Franklin Loehde for their generous participation. Finally the Windsor Centre appreciated the assistance of Don Hladiuk, President of the Calgary Centre, for his valuable information concerning the construction of the Wilson Coulee Observatory and how we could proceed in the construction of our own Observatory.

The Windsor Centre held nine regular meetings at St. Clair College. Four Council meetings were held during the year. A brief resumé follows:

- January 18 Our President briefly discussed the recent discovery of a second black hole, designated LMC-X3. Cyril Hallam gave an excellent presentation on his recent trip to Kitt Peak National Observatory. Cyril Hallam was awarded the 1982 Windsor Centre Service Award. Felice Bondy reported on the location and condition of our Centre's telescopes.
- February 15 Glenn Wagner discussed the main features of the R.A.S.C.'s Observer's Handbook. Randy Groundwater gave a presentation on the history of the Dan Bawtenheimer telescope. Much of the early history of the Windsor Centre was linked closely to Mr. Bawtenheimer's Observatory. Mr. Groundwater suggested that we build a telescope around the 10" mirror (which was all that remained of Dan's telescope).
- March 15 The President reported on the Feb. 19 Lowbrow Conference in Ann Arbor. Dr. John Huschilt from the University of Windsor gave a presentation entitled "The Scope of the Universe".
- April 19 Our Vice-President showed some slides from the Lowbrow Conference and his solar sunspot observing project. Randy Groundwater explained "The Brightest Stars" section of the Observer's Handbook. Our President gave a presentation on the types and structures of galaxies.
- May 17 Our Vice-President discussed the recent sighting of a comet just west of the big dipper. Steve used his 8" F-7 telescope to observe the comet. Mr. Graham Mills explained the use of computers in astronomy. Mr. Mills and Eric Johnson also demonstrated the use of computer programs in astronomy as well as the drawbacks.
- June 21 Steve Mastellotto announced the planning of a Star Fest by the North York Astronomical Association on the Bruce Peninsula from August 12th to 14th. John Thompson briefly reported on the solar eclipse he recently observed in Indonesia. The film "A Place of Dreams" by the U.S. National Air and Space Museum – Smithsonian Institute was screened. Our Vice-President explained the Observer's Handbook section on asteroids, as well as their structure and how to observe them.
- September 23 Randy Groundwater announced that the 50th anniversary of Stellafane is coming up in 1984 and that he would like to see a group from the Windsor Centre attend this special event. Eric Johnson discussed the meteor section of the Observer's Handbook. Four special guests were in attendance: Dr. John Huschilt, our Honorary President; John Thompson, President of the Sarnia Centre; Jack Brisbin, President of the Detroit Astronomical Society and our National President Franklin Loehde. Our guest speaker, President Loehde, discussed the planning and construction of the Edmonton Planetarium and Space Science Centre.
- October 18 Lynn Staffin, former member of the Windsor Centre, co-founder of the Gold Coast Astronomy Society in Florida, and Professor of Astronomy at the Florida Institute of Technology discussed "Tides". Jack Brisbin, President of the Detroit Astronomical Society presented an in-depth discussion on "Telescope Making".
- November 15 The Awards Committee presented the Windsor Centre's award to Mr. Henry Lee. Five R.A.S.C. membership certificates were given to: J. Meredith, H. Cunningham, R. Groundwater, E. Keith and L. Durocher. The nominations and elections of

officers for 1984 were held. John Thompson, President of the Samia Centre, gave a thorough presentation on his solar eclipse expedition to Indonesia in June.

LORISON A. DUROCHER, *Secretary*

WINNIPEG CENTRE

The Winnipeg Centre held its General Meetings at the University of Winnipeg, Lockhart Hall during the 1983 Session. And although it was a difficult year for our Centre with a reduction in the number of members and a great deal of needed repairs for our Observatory, it was a successful year for Star Parties and other events.

The end of October brought a successful 2nd Annual Halloween party coordinated by our Social Director Miss Brenda Belkin. About 45 people turned out for a most enjoyable evening.

For 6 weeks during the fall our President Mr. Guy Westcott and 1st Vice-President Mr. Andrew Lawless presented lectures to the first year University of Manitoba Astronomy students. This helped to continue our strong relationship with the University.

The International Astronomy Day Winnipeg Starnite was held on April 23 and over 200 people showed up at Lyndale Drive Park for a clear night of viewing. The Centre's c-14 was there as well as 5 other telescopes.

The July 1-3 long weekend featured the annual Mascon at Riding Mountain National Park. Five Winnipeg members and 4 Saskatoon members spent the weekend lecturing to the public at the park. Although the evenings turned out cloudy, the late night lectures and film sessions were well attended. The highlight of the weekend was a Sunday Solar Observing session in which park officials estimated 2400 people showing up to view the sun in an 8 hour period.

The summer events schedule concluded with a star party in Pinawa, near the Pinawa Nuclear Research Station, about 100 miles east of Winnipeg. About 15 members turned up for some dark sky observing at night.

The regular monthly meetings were as follows:

- October 82 The Annual General Meeting of the Winnipeg Centre, election of the officers and councillors. Two films were shown to close out the meeting.
- November 82 Mr. Ken Walsh, Head Systems Engineer at Bristol Aerospace gave a talk about Upper Atmosphere Research. He had excellent photos of Aurora taken by satellites.
- December 82 Dr. Richard Bochonko, University of Manitoba, discussed two recent proposed projects of the Canadian Professional Astronomers. He introduced the Canadian Long Base Array Telescope and the Canada/US/Australian Space Telescope.
- January 83 Mr. Grant Gussie, a member, discussed the "Hertzsprung Russell Diagram" and its use as a base for stellar evolution.
- February 83 Mr. Ed Torz, of the Manitoba Camera Club presented a talk on Black and White photography.
- March 83 Mr. Hans Thater, past-president, gave a lecture named "The Missing Chapter - An Incomplete History of Earth" followed by a visual display.
- April 83 Mr. Bill Krosney, a long time member, discussed his favourite topic "Astrophotography" and gave a stimulating discussion promoting technique over equipment.
- May 83 Mr. Chris Rutkowski presented a Planetarium show called "The Quasar Dilemma".
- June 83 Miss Brenda Belkin and Mr. Dave Sine gave a joint slide show demonstrating their recent Astrophotographic successes. It was followed by two new excellent films, "Kitt Peak" and "Southern Skies".
- September 83 Mr. Guy Westcott, President of the Winnipeg Centre, gave an informative and interesting demonstration on the dismantling, cleaning, and reassembly of a C8 Telescope.

STAN RUNGE, *Secretary*

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1943 – *Cyril G. Wates (Edmonton)	1956 – Maurice Drolet (Quebec)
1945 – Paul-H. Nadeau (Quebec)	1959 – Earl Milton (Edmonton)
1948 – Isabel K. Williamson (Montreal)	1967 – R.R. Thompson (Toronto)
1949 – Frank Sisman (Hamilton)	1979 – Rolf G. Meier (Ottawa)
1950 – *F. Keith Dalton (Toronto)	1980 – David Levy (Kingston)
1951 – DeLisle Garneau (Centre d'Astronomie de Montréal)	

KEN CHILTON PRIZE

The Chilton Prize was established in 1977 by the National Council of the Society, in remembrance of Ken E. Chilton, an active member of the Hamilton Centre. The prize is awarded annually to an amateur astronomer, resident in Canada, in recognition of a significant piece of astronomical work carried out or published during the year.

Awards have been made to the following:

1978 – J. Newton (Victoria)
1979 – W. Morrison (Kingston)
1981 – C. McCaw (Vancouver)
1983 – C. Spratt (Victoria)

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

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

- | | |
|---|---|
| 1959 – *E.J. A. Kennedy (Nat. Secretary) | 1970 – Norman Green (Hamilton) |
| *J.H. Horning (National Treasurer) | J.E. Kennedy (Saskatoon) |
| 1960 – *Charles M. Good (Montreal) | 1971 – *K.B. Meiklejohn (Calgary) |
| Miss F. Laforest (Montréal) | J.N.R. Scatliff (Winnipeg) |
| Frederic L. Troyer (Toronto) | 1972 – Vern Ramsay (Toronto) |
| 1961 – *Robert Peters (Victoria) | B.F. Shinn (Winnipeg) |
| 1962 – Jean Asselin (Montréal) | F. Schneider (Hamilton) |
| Robert J. Clark (Vancouver) | 1973 – Fred P. Lossing (Ottawa) |
| *Jesse Ketchum (Toronto) | 1974 – Ian Halliday (Ottawa) |
| Joseph A. Pearce (Victoria) | Fred Williams (Victoria) |
| 1963 – Edwin E. Bridgen (Montreal) | 1975 – D.J. FitzGerald (Toronto) |
| Miss M. Burland (Ottawa) | 1976 – F. Loehde (Edmonton) |
| A. Vibert Douglas (Kingston) | *Ken Chilton (Hamilton) |
| 1964 – *C.S. Beals (Ottawa) | R. Belfield (Winnipeg) |
| *M.W. Burke-Gaffney, S.J. (Halifax) | Mrs. P. Belfield (Winnipeg) |
| W.T. Goddard (Hamilton) | 1977 – P. Marmet (Quebec) |
| 1965 – *D.C. Bawtenheimer (Windsor) | J.R. Percy (Toronto) |
| *John F. Heard (Toronto) | Mrs. D. Russell (St. John's) |
| A.M. Crooker (Vancouver) | 1978 – Mrs. Marie Fidler Litchinsky |
| Ernest S. Keeping (Edmonton) | (Calgary & Toronto) |
| *W.S. Mallory (Hamilton) | 1979 – *R. Noel de Tilly |
| 1966 – P. Lemieux (Montreal) | (Centre d'Astronomie de Montréal) |
| *S. Litchinsky (Calgary) | A.W. Scott (Toronto) |
| W.J. McCallion (Hamilton) | 1980 – S.A. Mott (Ottawa) |
| W.A. Warren (Montreal) | 1981 – L.E. Coallier (Centre d'Astro. Montréal) |
| 1967 – H.S. Hogg (Toronto) | A. Covington (Ottawa) |
| P.M. Millman (Ottawa) | H. Creighton (Toronto) |
| *R.J. Northcott (Toronto) | Miss I.K. Williamson (Montreal) |
| *H. Simard (Montreal) | 1982 – D.P. Hube (Edmonton) |
| J.F. Wright (Vancouver) | G.N. Patterson (Saskatoon) |
| 1968 – *D.R.P. Coats (Calgary & Winnipeg) | 1983 – C. Aikman (Victoria) |
| George Ball (Victoria) | L.A. Higgs (Ottawa) |
| *Herbert Fox (Hamilton) | |

*Deceased

DECEASED MEMBERS FOR 1983

- | | |
|---------------------------------|---------------------------------|
| Dr. R.B. Abel (Halifax) | Mr. J. Hodges (Regina) |
| Mr. W.E. Benner (Hamilton) | Dr. T.A. Link (Calgary) |
| Dr. Bart J. Bok (U.S.A.) | Mr. D.A. Malone (Toronto) |
| Mr. C.M. Brant (Ottawa) | Mr. K.B. Meiklejohn (Calgary) |
| Dr. L.L. Bull (Victoria) | Mr. R. Noel de Tilly (Montreal) |
| Dr. J.D. Carrette (Quebec) | Mr. B. Proctor (Toronto) |
| Rev. C.J. de Catanzaro (Ottawa) | Mr. H.C. Swabey (Toronto) |
| Mr. B.O. Diedrich (Edmonton) | Mr. L.W. Welbourn (Hamilton) |
| Mr. W.A. Friz (U.S.A.) | Mr. R. Windell (U.S.A.) |

CENTRE TREASURERS' REPORTS FOR 1983

	Ottawa	Quebec	St. John's	Sarnia	Saskatoon	Toronto	Vancouver	Victoria	Windsor	Winnipeg
REVENUE										
Membership Fees	\$3,370.00	\$	145.00	\$442.50	\$	795.00	\$1,700.00	\$	2,770.50	\$1,952.00
Life Members Grants	261.00	8.00	—	—	32.00	544.00	163.00	192.00	8.00	16.00
Donations	545.00	—	—	—	1,742.85	66.96	1,120.61	140.46	—	95.40
Educational Activities	—	—	—	—	—	—	—	—	—	310.00
Interest & Dividends	218.18	—	—	9.66	174.22	2,228.53	359.75	1,029.83	35.38	—
Sales of Handbooks (Net)	159.00	20.00	—	—	—	23.00	—	111.00	29.00	50.00
Advertising	80.00	—	—	—	—	1,938.00	—	103.50	—	—
General Assembly (incl. Travel Grants)	—	—	750.00	—	—	—	—	581.00	—	254.00
Miscellaneous	1,456.00	—	—	3.51	225.00	684.73	275.63	2,072.20	—	284.85
Total Revenue	6,089.18	923.00	923.00	455.67	2,969.07	17,092.72	3,591.99	7,000.49	665.38	2,962.25
EXPENDITURES										
Fees remitted to N.O.	1,944.50	—	91.20	265.50	477.00	7,062.00	504.00	1,435.50	357.00	660.00
Library	—	—	44.25	—	—	—	—	230.33	109.20	132.74
Meetings & Newsletters	640.22	—	—	2.00	266.08	5,301.61	571.45	41.69	123.81	542.90
Annual Dinner (Net)	1,413.60	—	—	—	—	—	588.04	182.14	—	—
General Assembly (incl. Travel Grants)	—	—	—	—	—	300.00	—	1,162.00	—	254.00
Equipment & Supplies	289.89	—	—	29.18	—	—	—	1,162.00	114.77	145.53
Office Administration	—	—	—	—	—	—	—	200.42	—	18.30
General Expenses & Audit	—	—	—	17.96	148.19	1,592.74	282.00	—	—	112.38
Educational Activities	—	—	—	—	138.20	148.19	—	1,015.68	—	264.70
Insurance	—	—	—	—	173.00	165.00	—	522.00	—	192.00
Awards & Donations	—	—	—	—	—	32.40	—	—	—	9.14
Operating Expenses - Observatory	679.20	—	—	—	164.46	309.55	—	101.40	—	102.69
Miscellaneous	147.48	—	95.64	29.25	42.00	97.20	109.17	—	2.54	—
Total Expenditures	5,114.89	231.09	231.09	343.89	1,408.93	15,183.69	2,054.66	7,071.60	707.32	2,434.38
Surplus or (Deficit) on Operations	974.29	691.91	111.78	111.78	1,560.14	1,909.03	1,537.33	(71.11)	(41.94)	527.87
Balance from 1982	8,223.03	740.83	740.83	121.29	2,908.68	26,858.40	5,523.04	16,908.96	352.74	225.24
Balance to 1984	9,197.32	1,432.74	1,432.74	233.07	4,468.82	28,767.43	7,060.37	16,837.85	310.80	753.11
Other Assets	—	—	—	—	—	—	—	30,877.54	—	—

C. J. Tinkham & Associates

Chartered Accountants

C. J. TINKHAM, C.A., C.M.C.,
D. C. TINKHAM, B.COMM., C.A., C.M.C.,
P. J. BROCKLESBY, B.B.A., C.A.

2842 BLOOR STREET WEST
TORONTO ONTARIO
M8X 1B1

AUDITORS' REPORT

To the Members
of

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

We have examined the balance sheet of The Royal Astronomical Society of Canada as at December 31, 1983, and the statements of revenue and expenditure, deficit, and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of the Society as at December 31, 1983 and the results of its operations and changes in its financial position for the year then ended in accordance with the accounting principles set out in Note 1 applied on a basis consistent with that of the preceding year.

TORONTO, Ontario
March 16, 1984

C. J. Tinkham & Associates

CHARTERED ACCOUNTANTS

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

BALANCE SHEET
AS AT DECEMBER 31, 1983

A S S E T S

	<u>1983</u>	<u>1982</u>
<u>CURRENT</u>		
Cash and short term deposits	\$ 27,053	\$ 36,904
Accounts receivable	15,005	16,047
Loans to R.A.S.C. Centres	-	375
Prepaid expenses	<u>164</u>	<u>1,133</u>
	<u>42,222</u>	<u>54,459</u>
 <u>INVESTMENTS</u>		
Marketable securities - at cost		
(Market value: 1983 - 2,578		
1982 - 2,210)	<u>3,019</u>	<u>3,019</u>
 <u>SPECIAL PURPOSE FUNDS (Schedule C)</u>		
Cash and short term deposits		
(including accrued interest)	129,673	228,809
Marketable securities - at cost		
(Market value: 1983 - 3,325		
1982 - 66,875)	4,000	67,373
Deposit on lease	<u>-</u>	<u>1,158</u>
	<u>133,673</u>	<u>297,340</u>
 <u>FIXED</u>		
Office building, furniture, equipment, library (nominal value)	<u>1</u>	<u>1</u>
 Approved on behalf of the Council of the Society		
..... <i>Edward J. J. J.</i> President		
..... <i>David J. J.</i> Treasurer	<u>\$ 178,915</u>	<u>\$ 354,819</u>

LIABILITIES

	<u>1983</u>	<u>1982</u>
<u>CURRENT</u>		
Accounts payable and accrued charges	\$ 31,884	\$ 1,888
Deferred revenue		
- Membership fees for ensuing year	12,639	14,224
- Journal and handbook subscriptions	13,984	48,626
- Unappropriated life membership fees (Schedule A)	<u>22,765</u>	<u>20,811</u>
	<u>81,272</u>	<u>85,549</u>
<u>SPECIAL PURPOSE FUNDS</u> (Schedule C)	<u>133,673</u>	<u>297,340</u>
	<u>214,945</u>	<u>382,889</u>
<u>OPERATING DEFICIT</u>	<u>(36,030)</u>	<u>(28,070)</u>
	<u>\$ 178,915</u>	<u>\$ 354,819</u>

C. J. Finkham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
STATEMENT OF OPERATING DEFICIT
FOR THE YEAR ENDED DECEMBER 31, 1983

	<u>1983</u>	<u>1982</u>
Deficit, beginning of year	\$ 28,070	\$ 26,157
Excess of expenditure over income for the year	7,960	1,913
Deficit, end of year	\$ 36,030	\$ 28,070

Approved on behalf of the Council
of the Society

..... *Robert J. J. J.* President
 *David J. J.* Treasurer

C. J. Tinkham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
STATEMENT OF REVENUE AND EXPENDITURE
FOR THE YEAR ENDED DECEMBER 31, 1983

	<u>1983</u>	<u>1982</u>
<u>REVENUE</u>		
Membership fees		
- R.A.S.C. Centres	\$ 22,662	\$ 21,331
- Individual members	13,410	11,297
- Life membership: annual appropriation	<u>1,198</u>	<u>1,726</u>
	<u>37,270</u>	<u>34,354</u>
Grants and Donations		
- Government of Canada - annual grant	10,000	9,000
- Miscellaneous donations	<u>100</u>	<u>1,450</u>
	<u>10,100</u>	<u>10,450</u>
Publications		
- R.A.S.C. Journal: subscriptions	16,154	14,176
: reprints	1,893	1,179
: publishing revenue	9,614	10,841
Observer's Handbook	<u>86,450</u>	<u>60,502</u>
	<u>114,111</u>	<u>86,698</u>
Miscellaneous income		
- interest on investments	594	838
- insignia sales	<u>477</u>	<u>425</u>
	<u>1,071</u>	<u>1,263</u>
	<u>162,552</u>	<u>132,765</u>
<u>EXPENDITURE</u>		
Publications (Schedule B)	126,857	95,228
Office salaries and employee benefits	26,097	23,625
Postage and shipping expense	4,333	2,390
General and office expense	4,217	2,689
Stationery, printing, and supplies	119	1,279
Life membership allotment to Centres	1,832	2,001
General assembly and travel expense	2,241	3,369
Contribution to C.S. Beals Fund	-	600
Advertising and publicity	1,692	426
Insignia, medals and awards	1,160	1,635
Telephone	655	587
Insurance	478	263
Library expense	850	292
Office equipment purchases	-	145
Bad debts (recoveries)	<u>(19)</u>	<u>149</u>
	<u>170,512</u>	<u>134,678</u>
<u>EXCESS OF EXPENDITURES OVER REVENUE</u>	<u>\$ 7,960</u>	<u>\$ 1,913</u>

C. J. Tinkham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
STATEMENT OF CHANGES IN FINANCIAL POSITION
FOR THE YEAR ENDED DECEMBER 31, 1983

	<u>1983</u>	<u>1982</u>
<u>FUNDS WERE DERIVED FROM</u>		
Decrease in special purpose funds (assets)	\$ 163,667	\$ -
Increase in special purpose funds (liabilities)	-	17,624
	<u>163,667</u>	<u>17,624</u>
<u>FUNDS WERE APPLIED TO</u>		
Excess of expenditures over revenue	7,960	1,913
Increase in special purpose funds (assets)	-	17,624
Decrease in deferred revenue	34,273	3,015
Decrease in special purpose funds (liabilities)	163,667	-
	<u>205,900</u>	<u>22,552</u>
<u>DECREASE IN WORKING CAPITAL</u>	<u>\$ 42,233</u>	<u>\$ 4,928</u>

Approved on behalf of the Council
of the Society

..... *Robert J. ...* President
..... *David ...* Treasurer

C. J. Fenham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
SCHEDULE A
UNAPPROPRIATED LIFE MEMBERSHIP FEES

	<u>1983</u>	<u>1982</u>
BALANCE, beginning of year	\$ 20,811	\$ 21,037
<u>Add</u> : Life membership fees received in the year	3,786	1,500
	24,597	22,537
<u>Deduct</u> : Appropriation to general account	1,832	1,726
BALANCE, end of year	\$ 22,765	\$ 20,811

SCHEDULE B
PUBLICATION COSTS

R.A.S.C. Journal

Printing of journal	\$ 41,060	\$ 43,936
Printing of National Newsletter	10,691	9,187
Editorial assistance	750	500
Distribution costs	9,580	10,180
Reprints	2,225	1,913
	64,306	65,716

Observer's Handbook

Printing	56,534	27,872
Distribution costs	4,386	840
Advertising	1,631	800
	62,551	29,512
	\$ 126,857	\$ 95,228

C. J. Fenham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
 SCHEDULE C
ANALYSIS OF SPECIAL FUNDS
DECEMBER 31, 1983

	<u>1983</u>	<u>1982</u>
<u>BUILDING FUND</u>		
BALANCE, beginning of year	\$ 184,503	\$ 173,854
Add: Interest earned on investments	13,579	21,176
Gain on disposal of investments	2,431	-
Rental income	<u>3,482</u>	<u>-</u>
	203,995	195,030
Deduct: Rent for Society office	6,695	10,527
Office building expense (in lieu of rent)	3,144	-
Purchase of 136 Dupont Street	<u>180,794</u>	<u>-</u>
BALANCE, end of year	<u>\$ 13,362</u>	<u>\$ 184,503</u>
<u>SPECIAL PROJECTS FUND</u>		
BALANCE, beginning of year	\$ 81,395	\$ 75,423
Add: Interest earned on investments	<u>7,462</u>	<u>6,972</u>
	88,857	82,395
Deduct: Grants to Centres	<u>1,388</u>	<u>1,000</u>
BALANCE, end of year	<u>\$ 87,469</u>	<u>\$ 81,395</u>
<u>RUTH NORTHCOTT MEMORIAL FUND</u>		
BALANCE, beginning of year	\$ 18,819	\$ 18,242
Add: Interest earned on investments	<u>1,628</u>	<u>2,077</u>
	20,447	20,319
Deduct: Grants to Centres	950	500
Contribution to Society for 75th anniversary issue of the Journal	<u>-</u>	<u>1,000</u>
BALANCE, end of year	<u>\$ 19,497</u>	<u>\$ 18,819</u>
<u>EDWARD R. PATERSON BEQUEST</u>		
BALANCE, beginning of year	\$ 12,623	\$ 12,397
Add: Interest earned on investments	<u>923</u>	<u>952</u>
	13,546	13,349
Deduct: Contribution to Centre activities	<u>201</u>	<u>726</u>
BALANCE, end of year	<u>\$ 13,345</u>	<u>\$ 12,623</u>
<u>TOTAL BALANCE AT END OF YEAR</u>	<u>\$ 133,673</u>	<u>\$ 279,340</u>

C. J. Fenkham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
COMPOSITION OF SPECIAL PURPOSE FUNDS
AS AT DECEMBER 31, 1983

	<u>BUILDING FUND</u>	<u>SPECIAL PROJECTS FUND</u>	<u>RUTH NORTHCOTT FUND</u>	<u>EDWARD R. PATERSON BEQUEST</u>	<u>TOTAL</u>
Cash	\$ 1,660	\$ 15,069	\$ 6,171	\$ 3,345	\$ 26,245
Term deposits	45,000	72,400	9,000	10,000	136,400
Securities (at cost)	-	-	4,000	-	4,000
Accrued interest	4,193		326		4,519
Prepays	509				509
Bank loan	(38,000)				(38,000)
	<u>\$ 13,362</u>	<u>\$ 87,469</u>	<u>\$ 19,497</u>	<u>\$ 13,345</u>	<u>\$ 133,673</u>

C. J. Fenham & Associates

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1983

NOTE 1 ACCOUNTING POLICIES

The financial statements of the Society have been prepared in accordance with accounting policies generally followed by similar non-commercial organizations. The significant accounting policies observed in the preparation of these statements are summarized below.

- (a) **Membership fees:**
Members' fees are credited to income for the related membership year. Accordingly, fees received at the end of the year for the ensuing year are included in deferred revenue. Life membership fees are credited to deferred revenue when received. 5% of the life membership fund is transferred annually to the general account.
- (b) **Publications:**
Subscriptions to the R.A.S.C. Journal are credited to income for the subscription period.
- (c) **Investments:**
Investments are stated at cost. Investment income is recorded on the accrual basis.
- (d) **Special purpose funds:**
The special funds of the Society are classified in accordance with the objectives specified by the donors or in accordance with directives issued by Council. The income of the various funds is recorded on the accrual basis.
- (e) **Fixed assets:**
The office furniture, equipment and the library of the Society are carried in the accounts at a nominal value of \$1. Any new acquisitions are included in expenditure for the year. During the year the Society purchased a town house at 136 Dupont Street, Toronto for the national headquarters. The total cost of \$180,794 was charged to the building fund.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

NATIONAL OFFICERS AND COUNCIL FOR 1984

Honorary President — Peter M. Millman, B.A., A.M., Ph.D., F.R.S.C., Ottawa
President — Franklin Loehde, B.Sc., B.Ed., Edmonton
1st Vice-President — Roy L. Bishop, Ph.D., Halifax
2nd Vice-President — Mrs. Mary Grey, B.Sc., Ottawa
Secretary — R. Peter Broughton, M.Sc., A.R.C.T., 136 Dupont Street, Toronto M5R 1V2
Treasurer — Mrs. Marie Fidler, 136 Dupont Street, Toronto M5R 1V2
Recorder — Leo Enright, B.A., Kingston
Librarian — Philip Mozel, B.Sc., Oakville

Editor of JOURNAL — Alan H. Batten, D.Sc., Ph.D., F.R.S.C., Victoria
Editor of OBSERVER'S HANDBOOK — Roy L. Bishop, Ph.D., Halifax
Executive Secretary — Miss Rosemary Freeman, 136 Dupont Street, Toronto M5R 1V2

Council — Past Presidents — John R. Percy, Ph.D., Toronto
Ian Halliday, Ph.D., Ottawa

Representatives from Centres —

Calgary: E. Bamberry	Centre D'Astronomie	Toronto: R. Attwood
Edmonton: M.R. Rankin	Mtl.: Dr. P. Bastien	Dr. B.R. Chou
Halifax: W. Zukauskas	Niagara: Mrs. D. Fassel	I.G. McGregor
Hamilton: P. Ashenhurst	Ottawa: P. MacKinnon	Ms. E. Robinson
Kingston: T.D. Hicks	Quebec: D. Lemay	Vancouver: K. Miller
Kit.-Waterloo: E. Ekmanis	St. John's: G. Dymond	Victoria: L.M. Vander Byl
London: R.W. Cornforth	Sarnia: J. Thompson	Windsor: H. Lee
Montreal: G. Boyle	Saskatoon: J. Young	Winnipeg: S. Runge

CENTRE SECRETARIES FOR 1984

CALGARY	G. Kennedy, c/o Calgary Centennial Planetarium, P.O. Box 2100, Calgary, T2P 2M5
EDMONTON	Mrs. Yni Ebbers, 5526-145A Avenue, Edmonton, T5A 2S1
HALIFAX	R. Fraser, 40 Murray Hill Drive, Dartmouth, B2Y 2S2
HAMILTON	R. Allen, c/o P.O. Box 1223, Waterdown, L0R 2H0
KINGSTON	Mrs. S. Sorensen, #1-50 Montreal Street, Kingston, K7K 3E8
KIT.-WATERLOO	G. Mudry, 10 Royal Orchard Place, Kitchener, N2N 1Z6
LONDON	J. Kay, 6 Pauline Crescent, London, N6E 2L3
MONTREAL	G. Boyle, 8860 Jean Brillouin, #404, LaSalle, H8N 2G4
CENTRE D'ASTRONOMIE	J.P. Larrue, Casier postal 206, Station St-Michel, Montreal, H2A 3L9
NIAGARA	W. Jutting, P.O. Box 241, Niagara Falls, L2E 6T3
OTTAWA	C.R. Molson, c/o Herzberg Inst. of Astrophysics, N.R.C., 100 Sussex Dr., Ottawa, K1A 0R6
QUEBEC	Mme S. Gagne, C.P. 9396, Ste-Foy, G1V 4B5
ST. JOHN'S	R. Dodge, 63 Forbes St., St. John's, A1E 3L7
SARNIA	M. Marchand, c/o Box 2583, Sarnia, N7T 7V8
SASKATOON	Ms. L. Wilcox, Sub. P.O. N° 6, Box 317, Saskatoon, S7N 0W0
TORONTO	Dr. B.R. Chou, 1 Wilket Road, North York, M2L 1N5
VANCOUVER	Mrs. S. Baker, 2063 West 61st Avenue, Vancouver, V6P 2C6
VICTORIA	T. Lomas, P.O. Box 68, Station E, Victoria, V8W 2M7
WINDSOR	L.A. Durocher, E. Belle River Rd., RR #2, Belle River, N0R 1A0
WINNIPEG	S. Runge, c/o P.O. Box 215, St. James P.O. Winnipeg, R3J 3R4