NEWSLETTER/BULLETIN

The Royal Astronomical Society of Canada
La Societe Royale d'Astronomie du Canada

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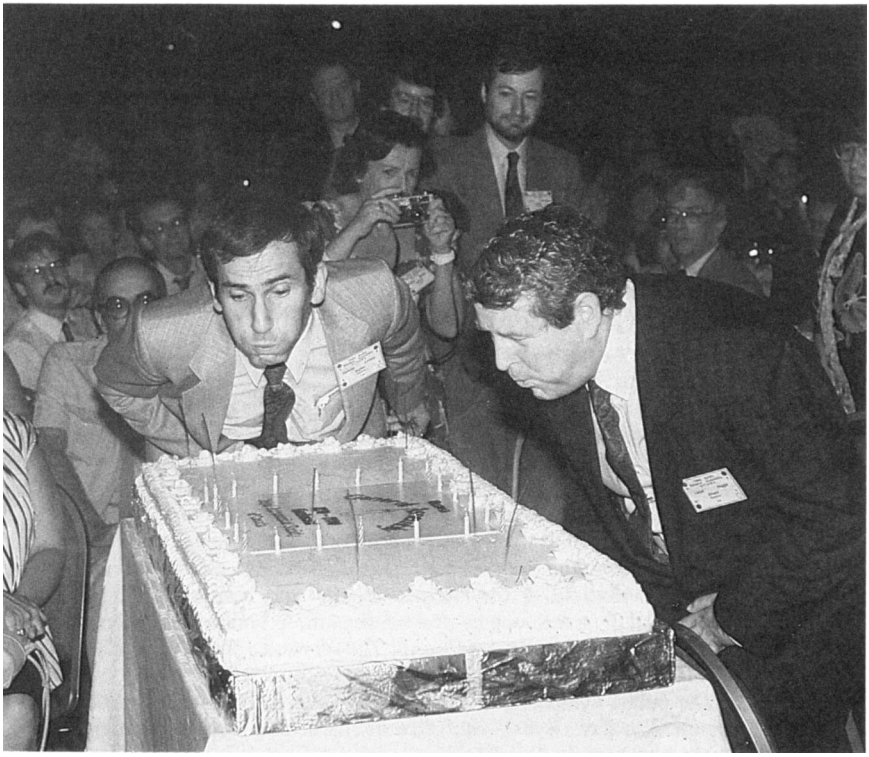

Happy 100th birthday, RASC! Outgoing president, Dr. Lloyd Higgs (right), shares the honours with incoming president, Damien Lemay (left), in blowing out the candles on the Centennial birthday cake. Photo by Steven Spinney.

NEWSLETTER/BULLETIN

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Deadline for February issue is December 15.

Centennial General Assembly

by Mary Anne Harrington
Toronto Centre

The 1990 General Assembly (GA) was held at Carleton University, along the banks of the beautiful Rideau River. The Ottawa Centre hosted this year's GA over the July 1 Canada Day long weekend and it featured a special public symposium marking the centennial of The Royal Astronomical Society of Canada.

The first meeting of National Council took place on Friday, June 29, and was followed in the evening by the slide show and song contest. Despite stiff competition, the winner of the slide show was Paul Mortfield of the Ottawa Centre (who is now residing in sunny California). There was a tie in the song contest between the Winnipeg Centre (again at the top!) and Gerry Knight of the Vancouver Centre. The scheduled EAST vs WEST softball game and tour of the Indian River Observatory (IRO) were rained out.

On Saturday the public symposium "You and the Universe" was held at the Alumni Theatre at Carleton. The day's events were free of charge and they were extremely well attended. Featured speakers included Lydia Dotto on "Planet Earth as a Life Support System"; Terence Dickinson on "Naturalists of the Night"; Richard Jarrell on "Astronomy for a Civilized Society"; René Racine on "Astronomical Research: Pain and Bliss"; and, on

The 1990 General Assembly "Pyramid." Top row (L to R): Stan Runge (Winnipeg), Andora Jackson (Winnipeg). Middle row: Doug George (Ottawa), Scott Young (Winnipeg), Don Hladiuk (Calgary), Chris Rutkowski (Winnipeg). Bottom row: Dale Morland (Ottawa), Otmar Eigler (Toronto), Steve Charlton (Winnipeg), an unknown member, Steven Spinney (Toronto).

Saturday evening, Joseph Veverka presented the 1990 Helen Sawyer Hogg Lecture "Exploration of the Solar System." (Watch for The *Journal* this fall where all of the papers presented at the symposium will be published.) The symposium was very successful and the members of the Centenary Committee who organized this event, Peter Broughton (chairman), Roy Bishop and John Percy, did a great job. A very relaxing Wine and Cheese party followed Professor Veverka's talk. Over the supper hour, an abbreviated EAST vs WEST softball game was played between rain drops. Although the EAST/WEST dividing line was a little rough and the EAST got, shall we say, clobbered, everybody had fun. The IRO tour was clouded out again.

Sunday, July 1 featured an excellent papers session. Some of the interesting topics included "Computer-Assisted Photometry At The Glenlea Observatory" by Chris Brown (Winnipeg); "Rare Books On Astronomy" by J.E. Kennedy (Saskatoon); "Reflections On A Society: The RASC As Seen Through Its Centre Newsletters" by Ian McGregor (Toronto); "The Origin Of The OB Runaway Stars" by Peter Leonard – Plaskett Medal Winner (UBC); "Aurorae And The Power System" by Joe Yurchesyn (Halifax); and "TOMA – An Idea Whose Time Has Come" by Peter Ceravolo (Ottawa).

Inclement weather earlier in the day moved the planned barbecue indoors, however the evening was actually clear. This left delegates with a choice of four ways to spend the remainder of the evening. One could join with thousands of others in celebrating Canada's birthday by heading for Parliament Hill for all the festivities, especially the fireworks display. One could visit the observatory on the roof of the Herzberg building, do some observing with their C-l4 and also see the fireworks. Or, since it was the first clear night,

one could finally visit the Ottawa Centre's Indian River Observatory. There, observing the heavens through a 16-inch Newtonian telescope (the only one in Canada to discover comets) and seeing the fireworks' colours in the cloud banks which rolled in by late evening were part of the package. Lastly, Option Four – SLEEP! It seems that no matter which option was chosen, it was a good one.

Monday morning, July 2, delegates enjoyed a tour of the fabulous new Canadian Museum of Civilization in Hull, Quebec. The architecture is stunning and well worth the price of admission, but then, so is CINEPLUS, the combination Imax and Omnimax theatre where we enjoyed "The Dream Is Alive" on the huge screen. Another major highlight of the Museum is the Grand Hall which has a superb display of totem poles, native houses and artwork saluting the native people of Canada's west coast.

Monday afternoon, the Annual Meeting of the Society was held. One of the major items on the agenda was the proposed fee increase. After a very lengthy discussion, the original motion proposed by the Finance Committee was approved. This means that starting with the 1990–91 membership year the fees will be: Regular – $32; Youth and Senior – $20; and Life – $640. It was also announced that Ian McGregor had completed his five year term as editor of the Newsletter and that the new editor will be Patrick Kelly of the Halifax Centre. The other major item was the election of the officers of the Society. The new National President is Damien Lemay (Quebec); 1st Vice-President is Peter Broughton (Toronto); and 2nd Vice-President is Douglas Hube (Edmonton). A short National Council meeting followed the Annual Meeting.

Monday evening we were off to the National Arts Centre for the Banquet and the best meal of the weekend. Several National awards were presented, along with prizes for the winners in the display competition. Doug George (Ottawa) won the Ken Chilton Prize and Mary Grey (Ottawa) was presented with the National Service Award. Special awards for service were also presented to Rosemary Freeman (Executive Secretary) and to Dr. Peter Millman (Ottawa). In the display competition, the Observational – Solar System category was won by Dan MacLennan (Halifax) for "Mounted Photographs (22nd Solar Cycle)"; the Observational – Objects Beyond The Solar System category was won by Frank Roy (Ottawa) for "Results from the Indian River Observatory Radio Interferometer 238 MHz Radio Survey"; the Non-observational category was won by Don Hladiuk (Calgary) for "Photo Display on Light Pollution"; and the Instrumentation category was won by Drs. Gary Susick and Fred Lossing (Ottawa) for "Spectrographic Analysis of Various LPR (Light Pollution Reduction) Filters and Their Application in Visual and Photographic Astronomy."

Dr. Lloyd Higgs, outgoing National President, was the guest speaker for the evening and presented a most interesting talk entitled "1990 And Beyond: The Prospects For Canadian Astronomy." A huge centennial birthday cake closed off a very enjoyable evening.

Tuesday morning, July 3, was the day of our last official event for the 1990 GA. This was a marvellous tour of the Ottawa River Solar Observatory, operated by the National Research Council. Visitors had a fun time observing the Sun in both white light and hydrogen-alpha using this wonderful 10-inch scope. Needless to say, we were disheartened to learn from our guide that, due to budget cuts, this facility would be closed down within the year!

And so, this highly successful and fun GA came to an end. The members of the organizing committee, especially chairman Rob McCallum and vice-chairman Doug George deserve much gratitude. Thanks to all the members of the Ottawa Centre for their kind hospitality. See you next year in Vancouver on the Victoria Day long weekend in May!

1990 Ottawa General Assembly
Abstracts of Papers Presented

Computer-Assisted Photometry At The Glenlea Observatory by Chris Brown, Winnipeg Centre

A normal set of photometric observations for a variable star requires about 2000 calculations to reduce the data. Most are simple addition or multiplication, but the sheer volume can quickly take the fun out of the hobby! At the Glenlea Observatory a personal computer now collects the readings directly from the photometer and reduces them on the spot to standard, fully-corrected magnitudes.

TOMA – An Idea Whose Time Has Come by Peter Ceravolo, Ottawa Centre

Consumer confidence in commercial optics is at an all time low due to bad press with respect to poor quality and misleading advertising. TOMA (Telescopic Optics Manufacturer's Association) has recently been formed to deal with these problems. Discussion will centre on what to expect and what not to expect from TOMA.

Centennial Astronomy Week – A Celebration Across Canada by Steve Dodson, Ottawa Centre

If you could have been "beamed" from Centre to Centre at "light speed" during Centennial Astronomy Week in April, making up your agenda from all the events offered everywhere in the country, what would your week have been like? This talk by the National Astronomy Day Coordinator provides a birds-eye (or perhaps better, Starship Enterprise Bridge Screen view) of the recent celebration.

Amateur Astronomy In The Ottawa Area by Doug George, Ottawa Centre

In 1906 the first Centre of the RASC outside of Toronto was formed in Ottawa, due in large part to the construction of the Dominion Observatory. The Observers' Group was formed in 1954 by members of the small but enthusiastic Amateur Telescope Makers Group. Since then, members of the Ottawa Centre have gained a reputation for their keen interest in observational astronomy. This talk describes the history of the Ottawa Centre's Observers' Group. Highlights include the "Quiet Site" meteor observing station, construction of the 16-inch telescope and the North Mountain Observatory in 1971 and the move to the Indian River Observatory in 1977. The present state of observational astronomy and observing facilities in the Ottawa area will be described. Finally, the light pollution threat will be discussed.

3 Vulpeculae: A Bright New Pulsating Variable In A One-Year Binary System by Douglas P. Hube, Edmonton Centre and G.C.L. Aikman, Victoria Centre

3 Vulpeculae is a naked-eye star which recently has been discovered to be a member of a binary system, with an orbital period of approximately one year. It also appears top be an intrinsic variable, almost certainly a member of the non-radially pulsating 53 Persei Class of variable stars. Photometric variations are to be expected at the level of a few hundredths of a magnitude.

Rare Books On Astronomy by J.E. Kennedy, Saskatoon Centre

Atlas Coelestis by Andreas Cellarius and *De Revolutionibus* by Nicolaus Copemicus, two rare books on astronomy, are among the many treasures to be found in the McGill

University Library System. There is general agreement that the Atlas contains twenty-nine of "the most beautiful star maps ever made." While the McGill copy of *De Revolutionibus* is not annotated, the donor, Sir William Osler, had the foresight to have the preface and introduction of this treatise translated and added at the back of the book. As far as is possible to determine, the McGill copies of Cellarius and Copernicus are the only ones in a Canadian library. These are rare and valuable reference works for the historian of pre-l9th century astronomy. A selection of star maps will be shown on slides, together with a few extracts from the preface and translation.

The Origin Of The OB Runaway Stars by Peter J.L. Leonard, University of British Columbia and Plaskett Medal Winner

The OB runaway stars are massive young O or B-type stars which are observed to be moving away from the galactic plane at high speeds (greater than 30 km/s) and/or which lie at large distances from the plane of the Galaxy (a few hundred parsecs or more). The hypothesis that these stars were ejected from the plane as a result of strong dynamical interactions in young open star clusters has been investigated via N-body simulations and binary-binary scattering experiments. It is found that the dynamical ejection hypothesis can reproduce the maximum velocity, binary frequency, and mass-velocity relation of OB runaways. Dynamical ejection also appears to be able to account for the observed number of OB runaways per unit surface area of the Galactic disk. In conclusion, dynamical ejection can explain the OB runaway stars.

Reflections On A Society: The RASC As Seen Through Its Centre Newsletters by Ian G. McGregor, Toronto Centre

The principal means of communication the Centres of the Society have with their members is through their newsletters. Whether a Centre has a large membership or a small membership, whether its members are geographically concentrated or isolated, the regularly published newsletter puts each member in contact with his or her Centre. What message do the newsletters communicate to their members and what do the newsletters tell us about the state of amateur astronomy in Canada? Examples will be taken from current newsletters.

Getting The Last Laugh On The Stars by Ian G. McGregor, Toronto Centre

Amateur astronomers develop a very special sense of humour as a result of the challenges they face in enjoying their hobby. The search for clear observing skies, the problems of light pollution, the operation of new equipment, the role of technology, and the unusual circumstances in which amateur astronomy is experienced, all can provide sources for laughter, jokes, riddles, and paradoxes. Much of this humour, and the experiences, adventures and observations which generate it, often goes unrecorded and is lost. What is recorded is found only in the pages of club newsletters. In this illustrated talk the joys and trials of amateur astronomy will be highlighted through the humour it has sparked among amateur astropomers.

Solar-Terrestrial Conditions Associated With The Quebec Power Disruption Of March 1989 by Richard W. Miller, Unattached Member

During Carrington Rotation 1813, in March 1989, solar active region SESC 5395 produced some of the most energetic flares of solar cycle 22 to date. The resulting geomagnetic disturbance produced a brilliant aurora which was observed over much of North America. Reports were received from as far south as Jamaica. At 02:45 EST on

March 13, 1989, much of the province of Quebec was plunged into darkness when the largest geomagnetic disturbance since 1960 resulted in the separation of the La Grande transmission network from the main power grid. During the next 36 hours, many power utilities in North America reported events on their systems due to geomagnetic disturbances. This paper summarizes the solar activity which was associated with these events. As well, it reviews in some detail the geomagnetic data from Canadian magnetic observatories and discusses the relationship of these data to some of the power system disturbances which occurred.

Schmidt Camera Photography by Paul Mortfield, Ottawa Centre

The lure of the Schmidt Camera with its perfect pinpoint images, fast f/ratio and large field of view is an ideal tool for the astrophotographer. However, many have shied away due to problems of focus, film scratches, or using single pieces of film. To correct the problem we must view the camera as just one part of a complete photographic system which includes everything from a solid mounting to film holders to choice of guidescope. The paper discusses the changes made to a commercially-produced Schmidt camera which with the addition of specially selected peripherals has produced a high calibre system for research or serious photography. A series of photographs taken with the camera will help trace the evolution of the system.

The Photometric Variability of P Cygni – A Blue Hypergiant by John R. Percy, Matthew Lester and Rene Plume of the University of Toronto and Wayne E. Clark, HowardJ. Landis and Russell E. Milton of the American Association of Variable Star Observers

P Cygni (34 Cygni, HR 7763, HD 193237) is a blue hypergiant which between 1600 and 1700 varied in brightness from magnitude 3 to 6. Since 1800, it has remained approximately constant ($V = 4.9$), with small variations ($\Delta V = 0.2$) on a time scale of weeks. P Cygni is also losing mass at a significant rate, possibly in "bursts" every few months. Despite P Cygni's interesting properties and history, it has been relatively neglected by variable star observers until quite recently. In this paper, we report on photoelectric photometry of P Cygni from 1985 to 1990, obtained as part of the photoelectric photometry program of the American Association of Variable Star Observers (AAVSO) and, in the summers, with the 0.4 m telescope of the University of Toronto. We also comment on the possible relationship between the photometric and spectroscopic variability.

Preliminary Results From The IRO Radio Interferometer 238 MHz Sky Survey by Frank Roy, Ottawa Centre

The radio interferometer at the Indian River Observatory has been operational since late 1978. It consists of two parabolic cylinders, each 15 metres by 5 metres, separated by 155 metres. The operating wavelength is 1.26 metres. In September 1987, a small group started to use the instrument to make a sky survey. Both galactic continuum and discrete source maps will be produced. A digital data acquisition system, based upon a PC-XT microcomputer, with custom-designed hardware and software, is being used to record the data. The project and progress to date are discussed.

A Study Of General Public Knowledge About Astronomy by Chris Rutkowski, Winnipeg Centre

A sample population was surveyed for general knowledge about astronomy, and in particular the relative sizes/distances of astronomical objects. Statistical results showed that people have considerable difficulty in comprehending the sizes and distance involved in basic astronomy.

Electronic Imaging At Glenlea Observatory by Scott Young and Stan Runge, Winnipeg Centre

The availability of a Model ST-4 Star Tracker/Imaging Camera coupled with the Winnipeg Centre's new computer has opened up a new avenue of observing at the Glenlea Observatory. The paper describes the use of this new electronic equipment, shows some of the images obtained and describes possible projects for the future.

Aurorae And The Power System by Joe Yuchesyn, Haljfax Centre

The sun, the solar system's ultimate power source, threw a wrench into a man-made counterpart on March 13, 1989, knocking out almost all of Quebec for about five hours, with some customers in the dark for close to two days. Aurorae induce very low frequency, on the order of a millihertz, currents in modem power systems, particularly northerly ones lying on very resistive bedrock like the Canadian Shield. These currents come about by the aurora's ability to distort the Earth's magnetic field. The movement of the normally static magnetic field lines induce Earth Surface Potentials (ESP's) across the ground of typically 5 V/km. The high resistance of the bedrock is paralleled by lower resistance transmission lines, connected to ground at various points through transformer neutrals. The result is a flow of current through the neutrals of these transformers and the lower resistance transmission lines, rather than through the bedrock. Low frequency neutral currents in transformers are difficult to detect and can cause damage or failure of the transformer by overheating. They also generate harmonic voltages (multiples of the fundamental 60 Hz frequency), causing problems for today's most modem power system device, the Static Var Compensator or SVC. SVC's are high-tech devices which switch capacitors and reactors at high speed to damp out system disturbance oscillations and provide dynamic stability for the power system. The modem power system evolved into one where the generating equipment is remote from load centres and interconnected by long transmission lines requiring the use of SVC's for stable operation. This circumstance has the double disadvantage of subjecting the lines to large ESP's (since the ESP magnitude is proportional to the line's length) and the mandatory need for SVC's which are sensitive to harmonic voltages generated indirectly by the ESP. If generation was close to load, transmission lines would be shorter, subjected to lower ESP's and not require the use of SVC's. Some design changes can reduce the effect of ESP's on the power system at the expense of other operational restrictions. Accurate prediction of magnetic storms offers the best means for power utilities to cope.

Way to Go, Toronto!

by Steve Dodson
Centennial Astronomy Week Coordinator

It couldn't have happened at a better time. This year has been a very active one for our Society, which now celebrates 100 years of promoting public knowledge of astronomy. Much of this year's activity was concentrated into Centennial Astronomy Week, which ended on Intemational Astronomy Day, April 28, 1990.

The Toronto Centre, with a task force of over 100 volunteers coordinated by Public Education Chairman John Ginder, entertained and enlightened the public at many sites with a great variety of activities spread over a 10 day period. The challenge of motivating and organizing such a large force over an area as large as Metro was far from trivial, but it was met with brilliance and energy. The results were a worthy contribution to a very important centennial celebration.

Therefore it is with great pride and satisfaction towards our 100-year-old organization and towards our colleagues in Toronto that I announce that the Toronto Centre has won the Second Annual Astronomy Day Award as judged by *Sky & Telescope* magazine.

No doubt the recognition of the worthiness of our aims and the excellence of our work on behalf of our communities and country represented by the awarding of this prize will encourage all of our centres and similar groups in other countries.

Much appreciation is due not only to John Ginder and his team of Toronto Centre volunteers, but also to helpful staff members of the Ontario Science Centre, McLaughlin Planetarium, and the Astronomy Departments of York University and the University of Toronto.

The Accessible Universe

by Steve Dodson
Astronomy Day Coordinator

The Stars Belong To Everyone. Surely, we are all inspired by the clear message of this bold statement penned by well-known Canadian astronomer Helen Sawyer Hogg as the title of her popular book. But think for a while about how most of us assert our right to enjoy the sky. Not everyone can casually glance upwards to take in views of starlight, or perform the seemingly simple rendezvous of the eye's pupil to the exit pupil of a telescope. Too many find the stars out of reach!

Most of us have not thought much about how to bring the enjoyment we experience in the pursuit of our avocation to the sight and hearing impaired, and to those confined to wheel chairs. However considerable resources are now available to bridge the gaps and a raising of interest and awareness can be discerned.

Now is an excellent time for individuals, centres, observatories, planetaria, and science centres to seriously consider ways of involving disabled people in astronomy. If we can put humankind on the Moon, we can somehow put the stars within reach of everyone! Answering this concern will be the suggested theme for Astronomy Day 1991 as we try to make ensure the stars do belong to everyone.

Next spring's Astronomy Day scheduled for Saturday, April 20 can be a focus for convincing the disabled that we have something to offer them, and that we are ready to take their needs into account and involve them. But it will not be helpful to issue an invitation and then not have substance to offer when the invited show up. We will have to do some homework!

Over the next few months centres should scout around their communities to find out what practical knowledge exists among individuals and organizations with an interest in removing barriers and providing new horizons for the disabled. For instance, the Canadian National Institute for the Blind will be very helpful, and some service clubs already have projects under way.

To help show what can be done, a series of articles in this newsletter will highlight the accomplishments of disabled stargazers and how their activities were made possible. The production of these articles will be coordinated by Denise Sabatini, president of the Kingston Centre RASC.

Please watch for these articles and be ready to stretch your minds and reach out with a helping hand!

The 25 Year Club

To recognize long-term membership in the Society during the 1990 Centennial Year the National Council decided at the February 1990 National Council meeting to publish a list of Society members with memberships continuing 25 years and over as of December 31, 1989.

CALGARY CENTRE
RE. Allin (1964), D.J. Fry (1965), F. Loehde (1952), R.A. Nelson (1958)

HALIFAX CENTRE
E.T.P. Wenneberg (1963), D.A. Whiston (1955)

HAMILTON CENTRE
D. Craig (1959), N. Green (1953), J.A. Winger (1953)

KINGSTON CENTRE
A.E. Covington (1946), D.H. Levy (1965)

LONDON CENTRE
W. Wehlau (1956)

CENTRE D'ASTRONOMIE DE MONTRÉAL
M.F. LaForest (1948)

MONTREAL CENTRE

R.J. Ballantyne 1963), D. Davies (1955), D.E. Douglas (1941), R.H. Hardie (1952), R.W. Jennings (1954), Al. Laur (l954), L. Nikkinen (1965), C. Papacosmos (1958), W.R. Ross (1962), R. Shaver (1955), F.A. Stephen (1945), W.A. Warren (1935), M.I. Yane (1953)

NIAGARA CENTRE
R.C. Doran (1964), W. Jutting (1964), H.N. Maclean (1961), F. Scordino (1961)

OTTAWA CENTRE
M.S. Burland (1926), ME. Bower (1955), J.D. Cook (1954), J.S. Cudmore (1965), W.E. Dey (1960), E.H. Dudgeon (1948), A. Fraser (1963), V. Gaizauskas (1956), A.A. Griffin (1960), G. Grant (1956), M. Grey (1963), I. Halliday (1948), E.P. Henderson (1945), J.P. Henderson (1918), M.I. Henderson (1957), G. Herzberg (1948), C.B. Hicks (1957), L.A. Higgs (1962), J.L. Horwood (1956), M. Kalbfleisch (1954), G.R. Lindsey (1960), J.L. Locke (1950), F.P. Lossing (1950), D.A. Maclulich (1947), P. Mackinnon (1962), P.M. Millman (1926), D.C. Morton(1952), S.A. Mott (1938), F.R. Park (1956), B.H. Rawlings (1959), P.R. Ryback (1964), R. Salmon (1961), H. Simkover (1965), D.W. Smellie (1958), M.M. Thomson (1930), J.R. Wlochowic (1962), T. Wray (1964)

QUEBEC CENTRE
AG. Bechard (1964), D. Lemay (1965)

SASKATOON CENTRE
J.E. Kennedy (1954)

TORONTO CENTRE
M. Altman (1950), H.D. Armstrong (1961), D.R. Austin (1948), L.B. Backus (1953), G.A. Bakos (1952), C. Bartwick (1944), R.P. Broughton (1963), E.G. Bumham (1950), M. Chapman (1955), L.A. Chester (1959), C.G. Clark (1966), T.R. Clarke (1964), H.C. Creighton (1956), J.W. Dewar (1948), T. Dickinson (1959), K.A. Frenkel (1965), D.A. Godden (1965), F.J. Hancock (1952), P.J. Harris (1959), R.C. Henry (1958), G. Hepburn (1930), D.E. Hogg (1958), H.S. Hogg (1932), E.L. Houston (1962), D.A. Hyslop (1940), K.A. Innanen (1962), W. Johnson (1959), F.S. Jones (1935), H.J. Koller (1959), R.B. Laing (1936), U.G. Lama (1954), D.A. Lane (1963), RB. Larson (1961), J. Low (1959), D.A. Macrae (1953), F.P. McDonald (1950), I.G. McGregor (1964), K. Milles (1959), D.S. Mitchell (1959), J.R. Percy (1961), B. Ramsay (1964), R.V. Ramsay (1948), R.H. Rixen (1957), F.P. Scholer (1960), C.J. Smith (1965), S.V. Soanes (1943), K. Sprague (1965), W.J. Stephenson (1963), R.R. Thompson (1955), F.L. Troyer (1935), W.T. Tutte (1952), M.H. Watson (1934), R.E. Welch (1963), J.V. Wright (1955), C.S. Yu (1947), J. Zeglinski (1964)

VANCOUVER CENTRE
S. Baker (1962), A.M. Crooker (1935), E.J. Dunn (1965), J.S. Greer (1962), D.A. Roger (1965), P.J. Sykes (1932), S. Sullivan (1956), T. Taylor (1954), A.B. Underhill (1942), J.F. Wright (1948), K. Zorgo (1942)

VICTORIA CENTRE
A.A. Andersen (1960), G.R. Ball (1955), A.H. Batten (1962), J.L. Climenhaga (1957), J.M. fletcher (1958), F.D. Hatwick (1964), F.J. Howell (1958), J.L. Jervis (1945), R.S. Kushwaha (1957), C.D. Mansell (1941), R.G. Napier (1963), S.L. Nixon (1962), N.R. Rogers (1936), B.F. Shinn (1954), J.B. Tatum (1965), E.R. Walker (1944), R. Williams (1960), K.O. Wright (1934)

WINDSOR CENTRE
H. Lee (1943) J. Meredith (1955)

WINNIPEG CENTRE
T.D. Cairns (1953)

UNATTACHED CANADA
S.E. Barry (1945), H.B. Berrys (1962), D.H. Fallows (1965), J.A. Galt (1947), R.T.C. Heaps (1940), W.P. Kinsman (1946), J.D. Lacey (1961), P. Moffat (1964), R.S. Roger (1965), S.M. Sundell (1952), D. Wallace (1956)

UNATTACHED U.S.A.
F.N. Aldrich (1950), J.A. Anderer (1946), L. Baxter II (1946), H.L. Brooks (1960), W. Buscombe (1948), R.S. Cadwalladar (1954), E.H. Cherrington (1960), U. Clarke (1950), W.E. Dorion (1956), W.A. Feibelman (1953), C.B. Ford (1952), C.D. Francis (1963), R.H. Garstang (1947), J.Q. Grant Jr. (1941), C.R. Hammond (1958), R.B. Herr (1965), E.F. Jenkins (1962), D. Jewitt (1938), L.T. Johnson (1938), J. Kline (1928), J.R. Lennart (1965), J.F Maier (1961), C.W. Manion (1965), S.P. Maran (1957), M.M. Mayall (1952), H.C. Miller (1946), C. Muses (1955), M.W. Peters (1960), R.G. Plummer (1964), S.J. Richer (1954), D.W. Rosebrugh (1928), I. Sacks (1962), C.D. Schaeffer (1955), L.R. Schmieder (1946), M. Schwartschild (1963), M.J. Small (1965), J.A. Sperry Jr. (1955),

MB. Stewart (1948), J. Stokley (1925), J.E. Westfall (1951), RE. Zimmermann (1963), R.T. Zoch (1938)

FOREIGN
Australia – G. Reber (1948); Bermuda – M. Nash (1962); England – A.V. De Reuck (1948), Holland – J.H. Oort (1954); India – J.A. Moos (1948); New Zealand – F.M. Bateson (1961), Scotland – M. Gadsden (1948); and Soviet Union – V.A. Ambartsumian (1959)

Across the R.A.S.C.

Across the R.A.S.C. is a regular feature of the Newsletter. Specific contributions are requested from Centres to provide accurate news on current and upcoming activities. Deadline for the February issue is December 1.

SASKATOON: Jeff Phillips reports that participation of the club's membership in activities picked up during the early summer. The members observing night in June was a success with good attendance and clear skies. On July 20 and 21 the Centre held its 15th Annual Public Star Night at a local park. The first night was clouded out and there were clouds on the second night but views of the partial solar eclipse during the daytime produced an excellent public turnout. Publicity for the event was carried by posters, newspapers and television. Rick Huziak's newly-completed solar telescope was very popular.

KINGSTON: Congratulations are due to two Centre members. On May 20, Honourary President David Levy discovered his sixth comet and a few days later, Stanley Hanna complied his observation of the Messier list after 21 months of observing.

WINDSOR: C. Joady Ulrich, Secretary for the Centre, has moved to a new address in the city. To contact the Windsor Centre through him write to Joady at 5450 Haig Avenue, Windsor, Ontario N8T lK9. The phone number is the same. The Centre hosted displays and observing sessions at the Windsor Science Fair in April and at the Canada Science Fair in May. The Centre also had speaker exchanges earlier in the year with clubs represented by Jack Brisbin (President, Detroit Astronomical Society) and Marty Kunz (President, Warren Astronomical Society) giving presentations. Al Des Rosiers and Tom Sharron have almost completed the restoration of the Gus Nyberg 20 cm reflector for the Centre. Members are looking forward to the favourable opposition of Mars later this autumn.

HAMILTON: The month of June saw the Centre's observatory roof replaced reports Centre Secretary Karyn Bennett. There had been problems with water leakage and carpenter ants but due to the masterful planning of Eric Golding and his troop of trusty roofers, the observatory is now as dry as a bone. Garry Woodcock was in charge of internal renovations which included a paint job, a computer workstation and a set of new bookshelves.

John Gauvreau hosted an observers night on July 21 and on July 22 a public solar observing event was held at the observatory with hot dogs and pop on sale. A large scale star night was being planned in co-operation with the Hamilton Region Conservation Authority. Members attended both the Syracuse Summer Seminar and Starfest during the summer.

In other news, the newsletter *Orbit* will have a high quality four-colour cover this autumn. Editor Derek Baker was able to produce a summer issue due to an overabundance of articles submitted. Barry Sherman has been upgrading the Centre's telescopes and all instruments are now operational.

Distant View of Mars

by Richard W. Schmnde, Jr. Department of Chemistry
Texas A&M University
College Station, Texas

Mars will reach opposition on November 27, 1990. At this time, the planet will subtend an angular diameter of just over 18 arc-seconds and will thus be closer to the earth than at any other time during the past ten years. Furthermore, Mars will be at a declination of +23 degrees north meaning that it will be well-placed for Canadian and British observers. For example, observers in Toronto will see Mars rise more than 65 degrees above their horizon whereas in 1988 Mars reached a maximum altitude of 45 degrees. Unfortunately though, by November, Mars' south polar cap will be very small due to the fact that it will be late summer in Mars' southern hemisphere.

Figure 1 shows three drawing of Mars that I made during March and early April of 1990 with the 35.5 cm telescope at Texas A&M University Observatory. Despite Mars' great distance during this time, several features were visible including Mare Erythraeum, Syrtis Minor, Mare Cimmerium, Solis Lacus and the south polar cap. The south polar cap was especially distinct and was surrounded by a dark collar. In addition, a bright patch of light near the northern limb of Mars was generally visible. This may be water ice clouds which have formed as a result of sublimation of the north polar cap. We do know the residual north polar cap is composed of water ice and at this time (summer and early autumn in the norther hemisphere of Mars) the water vapour abundance is high in Mars' north polar region.

I felt that the greatest limitation to observing Mars during March and April of 1990 was not the great distance of the planet but rather its low elevation. Mars was only 30–35 degrees above the horizon at sunrise at my latitude (+ 30.6 degrees north). Because of this, the seeing was generally below average and my best view of the planet was during the 30 minutes immediately before sunrise. In spite of this several features were visible on the surface of Mars at magnifications of 325X and 528X. At opposition, Mars will cover an area ten times that which it had when the drawings in the figure were made. This, combined with the higher elevation which the planet will have in November should guarantee a sharp view of Mars.

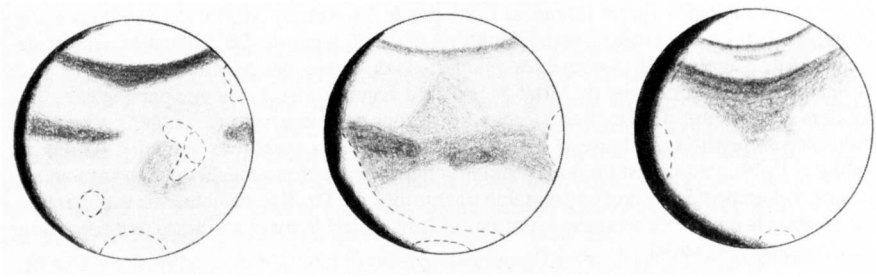

Figure 1: Three drawings of Mars. Left: March 3, 1990 (11:50-12:34 UT); central meridian at 48 to 59 degrees; 325X. Centre: March 18, 1990 (11:35-12:42 UT); central meridian at 257 to 274 degrees; 325X. Right: April 7, 1990 (11:20-12:11 UT); central meridian at 57 to 69 degrees; 325X and 528X. All three drawings were made with the 35.5cm telescope at Texas A&M University Observatory. South is at the top.

L'astronomie au Canada français

par Marc A Gélinas
Rédacteur francophone

Le groupe de Québec

Le groupe d'observation du Centre de Québec nous a fait un petit rapport de ses activités par la voix d'un de ses membres, M. Jean-François Viens, voici ce qu'il nous dit : "...nous nous réunissons à chaque mois à l'Université Laval, on y jase d'astronomie : publication, observation, télescope, photographie, informatique, études, et ...hamburgers!"

"Nous sommes environs une dizaine de mordus, il y a messieurs Beauchamp, Martel, Valières. II y a aussi les frères Denis et Stéphane Potvin, qui sont particulièrement impliqués dans la photographie de Jupiter. Dans Côté nous distibue régulièrement les télégrammes de l'Union Astronomique International (UAI). Il a en effet à sa disposition à son lieu de travail un réseau information pour y accèder."

"En Mars nous avons tenté de faire le marathon Messier, mais la température glaciale nous a vite fait comprendre d'adopter un programme moms ambitieux. Nous disposions de deux Schmidt-Cassegrain de 20 cm et d'un Newton 30 cm."

"En juillet, Ms Martel et Valière venaient tout juste de recevoir, après deux ans et demi de patience, leur miroir de 40 cm de chez Telescopics, ils projettent de l'installer sur une monture à fourche reposant sur une colonne de béton, le tout sous un dôme. C'est un projet trs impressionnant et prometteur."

M. Viens se défini lui-même comme le plus maniaque du groupe, et avec raison quand on voit la quantité d'observations qu'il fait. Les récents articles publiés dans le Québec-Astronomique font état de son acharnement. Entre autres il fais de nombreuses mesure de magnitude des comètes qui nous visitent. Ainsi il rapporte avoir déduit de ses observations, que la comète Austin avait une magnitude absolue 8,2 et un indice d'activi n = 3,7. Ce sera intéressant de comparer ces chiffres avec ceux qui seront publiés sûrement bientôt.

Les activités publiques de l'été:

Parmi les activités ouvertes au grand public québécois, le Festival Populaire du mont-Mégantic est celui qui attire le plus de monde. A Notre-Dame-Des-Bois, au pied de la montagne et de l'observatoire du Mont-Mégantic, diverses activités, dont des visites d'observation au télescope de 1,60, ont été organisés les 13 et 14 juillet. Les deux conférences majeures furent données, l'une par le Dr Antony Moffat de l'Université de Montréal sur Le télescope Spatial Hubble" et l'autre par le Dr Edouardo Hardy de l'Université Laval sur "Les nouvelles générations de telescopes géants".

Par ailleurs l'observatoire du Mont-Mégantic a accuelli cet été, comme par le passé, des milliers de visiteurs. Le Dr. René Racine, directeur de l'observatoire, déplore cependant l'absence de facilités sanitaires et autres pour accueillir ces nombreux visiteurs, d'ailleurs même si l'observatoire est un outil promotionnel pour l'astronomie, il reste avant tout un lieu de recherche nécessitant une certaine tranquillité. Le Dr. Racine note avec une certaine satisfaction la qualité du seeing et le nombre de nuit utilisable sur ce site après tout pas si loin de Québec ou Montréal.

La journe MIRA:

Le club d'astronomie MIRA, de Mirabel, a tenu son activité publique annuel enjuillet. Il a attiré de nombreux astronomes amateurs. Parmi ces derniers, les organisateurs ont eu l'heureuse surprise de voir arriver David Levy, érivain, et surtout grand astronome amateur.

M. Levy, qui vit et travaille maintenant en Arizona, est originaire de Montréal où il a fait ses prèmieres armes en astronomie au Centre de la R.A.S.C. Gilbert Ouellette, vice-président a la Société d'Astronomie de Montréal était tout fier de raconter que son télescope avait été pointé sur la comète Levy. . . par son découvreur même.

Le congrès de l'AGAA :

Le prochain événement important à signaler sera le congrès de l'Association des Groupes d'Astronomes Amateurs du Québec (AGAA) qui se tiendra à Rimouski du 21 au 23 septembre , à suivre.

Recruiting Disabled People Into Astronomy

by Denise Sabatini
Kingston Centre

As I was reading a synopsis of the life of John Goodricke, an 18th century astronomer who was deaf, it occurred to me that I had seen very few, if any, disabled people at our centre meetings. I questioned the reasons why this was so and after much thought, I realized that our recruiting practices were targeted for the general public. Although we do not discriminate against disabled people, we are unintentionally ignoring them. Most membership recruiting efforts reach the abled person. It is time to consider how to reach the disabled person.

The RASC can do many things to help disabled people. A survey can be done in the *Newsletter* to identify the disabled people in the Society. Once disabled people are identified, they can be asked to serve as consultants to the Society, the centres and individuals who may require assistance. The *Newsletter* can be used to publish articles from disabled members or members who are instituting programs for the disabled. Articles such as these would encourage disabled people, inform the membership as to what is happening in other centres and spread ideas on how to provide worthwhile programs. The Society could sponsor the production of learning materials for the disabled. For example, braille brochures and videos with a deaf interpreter could be produced. The Society can work with other international organizations such as the British Astronomical Association and the Astronomical League. The Society can promote the theme of "Astronomy for the Disabled" for Astronomy Day.

The RASC Centres can also play a crucial part in recruiting disabled people. For Astronomy Day, promotional material could be sent to local associations for disabled people. The Centres can work with the associations to make arrangements for disabled groups to participate in club public programmes. Exhibits and displays should be designed to assist the disabled. For example, magnifying glass and a deaf interpreter should be at the exhibit. Centres also need to review their publicity policies. A simple statement describing for example wheelchair access to a meeting room is all that is needed to convey the idea that our hobby is accessible to all and that the disabled are welcome.

Meeting schedules could be sent to local associations for the disabled for publication in their newsletters. Most editors of newsletters are always looking for items to print. Along with schedules, offer to do talks at their meetings. Program officers are always looking for topics for meetings. Perhaps the most important thing Centres can do is adapt their observatories and equipment to accommodate the disabled. Although this may seem costly, many foundations and organizations give grants for purposes such as these.

The role of the individual is perhaps the most important. The individual can volunteer to give lectures to disabled groups. Write articles on astronomy and submit them to newsletters for the disabled. Do not be afraid to talk to groups about astronomy and its rewards. Get involved in your Centre's decision-making body that determines accessibility to the observatory. When the observatory needs repairs, think of ways it can be renovated to assist the disabled and push for those changes. Call local associations for ideas and assistance. These associations are more than willing to give all the assistance you need in developing programs and giving advice on adapting facilities to make them accessible to the disabled.

Everyone wins! The RASC and Centres become stronger, the field of astronomy gains more observers, and most of all, the disabled person finds an exciting career, an opportunity to make contributions to science, or a very enjoyable hobby. If anyone has any ideas to share with me, I would greatly appreciate them. Please write to me at P.O. Box 196, Sharbot Lake, Ontario K0H 2P0. I also wish to acknowledge the assistance of C. Joady Ulrich of the Windsor Centre in the preparation of this paper.

Due$ Due

The 1991 membership year began October 1, 1990. If you have not renewed by December 31 you may miss receiving some of the 1991 publications. The 1991 national fees proposed to the membership in the spring were approved at the Annual Meeting of July 2, 1990. The fees for the 1991 year are:

Regular Membership	$32.00
Youth Membership (under 21 years of age)	$20.00
Senior Membership (65 years of age and over)	$20.00
Life Membership	$640.00

For all foreign members, residents in the United States and overseas, these amounts are quoted in U.S. Funds.

For a description of the membership classes, members should refer to the Society's *Journal* (April 1989) where the Society's By-Law One has been printed. Article 3 Section 3.02 describes the classes of members.

Fees should be sent to your Centre Treasurer, or if you are an unattached member, directly to the National Office. The new 1991 *Observer's Handbook* should be in the hands of Centres and ready for distribution to paid-up 1991 members by late October.

Renewal fees are due and payable between October 1 and December 31. If not paid by December 31, an individual ceases to be a member of the Society as of January 1, 1991. See By-Law Number One Article 3, Section 3.06 (3).

Late renewals cause extra work for the members responsible for handling the processing of memberships. Please help by renewing promptly.

If you haven't renewed yet, what's holding you back?