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BULLETIN

La Société
Royale d'Astronomie
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Reflections

Astronomy and the Four R's
Scott Young
Winnipeg Centre

As one of twenty-two centres of the R.A.S.C., we regularly receive the newsletters of other centres. While reading through the last batch of them, I came across something interesting. Of the seven newsletters I read, only one was printed on recycled paper. Five were printed on ordinary but recyclable paper and one had a thick glossy cover that was non-recyclable. "So what?", you may say. Well, here is what.

Amateur astronomers (or "naturalists of the night" as Terence Dickinson puts it) spend much of their time looking at the wonders of the universe. They marvel at the pristine beauty of some far-off cluster of stars or at the intricacy and complex detail in the planets of our solar system. They band together in groups to promote the wonder of astronomy to the general public. And then some of them contribute to global warming and the deforestation of our own planet by printing thousands of local newsletters on non-recycled paper.

Astronomy has shown us first-hand what might happen if the ozone layer disappeared, or if carbon dioxide levels increased due to deforestation. Just look at the barren, lifeless plains of Mars, or the hellish clouds of Venus for examples of what Earth could become. Astronomy has shown us what our future could hold without actually having it happen to us. What we do with this type of knowledge is up to us. In a way, astronomy has given us some control over the destiny of the human race. (So who says astronomy is not practical?)

Amateur astronomers have the opportunity to bring these ideas to the general public. The new four R's (Refuse, Reduce, Reuse and Recycle) are becoming more popular. Recycled paper is now no more expensive to use than regular paper. Yet six of those seven newsletters were not on recycled paper. It amazes me that astronomers can be so concerned with the beauty of the natural universe and still contribute to destroying our small part of it.

We should know better. We do know better. Think about it. ☼

New Society Publication Launched

Leo Enright

After many years of planning, the R.A.S.C. is launching a new observing guide for the beginning observer. This publication, which is expected to be produced annually, will assist the novice in finding his or her way around the night sky and will provide basic observing tips in a non-technical and unthreatening way. The title of this new publication is *The Beginner's Observing Guide - 1992: An Introduction to the Night Sky for the Novice Stargazer*.

Besides assisting the beginner in becoming acquainted with the constellations month by month, this book will teach basic information about motion, measuring distance and finding direction in the night sky. Enlarged versions of the six sky maps found in the *Observer's Handbook* are used as the basis for explaining the night sky throughout the year.

This guide provides helpful tips on becoming an accomplished observer, as well as information about what the beginner should look for at

various times of the year, along with information on how to record observations quickly and easily. A key section provides information on the importance of binoculars for the beginner and suggests when such a person should consider the purchase of a telescope.

Basic information about observing the Moon, planets and eclipses during 1992 is provided. There are also sections on observing meteors, comets, the aurora and the zodiacal light. The safe observation of the Sun is also considered.

An important part of the book deals with where the beginner should turn for more information and this is considered under four headings: joining an astronomy club, books, magazines and visiting observatories and planetaria.

Near the end there is a part of the book dealing with suggestions for Brownies, Cubs, Guides and Scouts, all of which have certain requirements for some of their achievement badges. The book concludes with some frequently asked questions that seem to always be on the mind of beginning observers, along with their answers. There is also an appendix of useful information about our solar system and lists of objects that can be easily observed.

In all, there are 116 pages of information that should prove very useful to the beginning observer. The format is such that it is intended for easy use outdoors at an observing table; a plastic spiral binding will allow the book to lie flat. At a cost of approximately \$5.00 this observing guide should prove to be a very popular tool in the hands of beginners young and old.

Members should purchase their copies from their centre treasurers. Centre secretaries and treasurers should be sure that their centres have obtained enough copies for the current observing season. ☼



BULLETIN

is a publication of the Royal Astronomical Society of Canada and is distributed together with the Society's Journal. It contains articles on current activities of the Royal Astronomical Society of Canada and its Centres across Canada, as well as articles from members and non-members which are of general interest to members of the Society. Manuscripts (in English or French) should be submitted to the Editor at the address below. Inquiries about the Society should be directed to its National Office at 136 Dupont Street, Toronto, Ontario, Canada M5R 1V2.

Supplement to the *Journal*/Supplement au *Journal*

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Event Horizon

July 2-5

1992 General Assembly Calgary, Alberta
Contact: Calgary Centre, R.A.S.C., c/o Centennial Planetarium, P.O. Box 2100, Calgary, Alberta T2P 2M5

September 18-21

MEPCO '92

Meeting of European (and International) Planetary and Cometary Observers '92
Violau, Bavaria, Germany
Contact: Wolfgang Meyer, Martinstr. 1,
D-(W)1000 Berlin 41, Germany

Letters to the Editor

May the Force Be With Us?

The Royal Astronomical Society of Canada is dedicated to the advancement of astronomy and allied sciences and our reason for being is thus limited. As a society, we take no stand on unrelated issues. Of course, being human, our individual members are often dedicated to other causes as well. These may be religious, political, metaphysical or of another kind altogether.

But it does a disservice to the purpose of our society when one of its publications, this **BULLETIN**, is used in an attempt to link astronomy with subjective personal values, no matter how noble they may seem. In particular, the publication of Louie Bernstein's *What is Heaven? A Personal Perspective* (August 1991) is regrettable. Here, I would like to focus on two reasons for this.

Firstly, the language necessarily confuses. Bernstein believes "that God exists, but as a force". As an undergraduate, I read Faraday's *On the Various Forces in Nature*; currently, I follow experimental work into the properties of electromagnetism, the weak force, the strong force and gravity. I am fascinated by theoretical attempts to unify the four forces, and by attempts to find evidence for a fifth one.

But when we look at the proposition that God is a force, we find that the word is used in a sense that is different, not in quantity, but in kind. I do not think that those who subscribe to this notion have in mind a physical force like the others, experimentally measurable and theoretically describable. On points like this, physics and metaphysics are separated by an unbridgeable chasm. Nor is there any way in which astronomy can verify the assertion that God "flows through us as the potential for compassion and love". Nor, for that matter is there any way known to science or logic which permits the inference of value judgements from statements of fact.

The effects of Bernstein's article depends largely on a sleight-of-language that uses one word for two categorically different concepts. Those who understand both logic and science are unlikely to be misled but others are bound to become confused. The confusion is aggravated by the fact that the argument is made in what purports to be a scientific publication.

Secondly, historical attempts to apply the methods of religion, political ideology or metaphysics to the physical world have not been rewarded with scientific success. What advance resulted when Galileo was shown instruments of torture and forced to retract his defence of

Copernicus? What contribution to the understanding of the nature of life is made by contemporary creationists who proceed from supposedly inerrant biblical premises? Just how did Lysenko deepen our knowledge of genetics? I seem to recall that the metaphysician Hegel concluded, on purely metaphysical grounds, that the solar system must necessarily include just seven planets. This, not too long before the discovery of Neptune.

The physical sciences and non-empirical disciplines, such as religion, each have their own methods and scope. To blur the line between them is to invite scientific disaster.

Christian Stuhr

Cypress Hills Regional College
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Let's All Share the Beauty

As a member of the Ottawa Centre of the R.A.S.C. for my third year now, I was somewhat taken aback by the article which appeared in the August 1991 issue of the **BULLETIN** entitled *What is Heaven?*

Although I could write pages pointing out the lack of scientific scrutiny in Mr. Bernstein's article, to do so would be pointless. Personally, I am not offended by the stance taken by Mr. Bernstein. As a Christian astronomer, I have a number of good friends who stand on both sides of the issue. Actually, I am not sure that there really are two issues here. I have no trouble believing that the Big Bang and Creation may, in fact, be one and the same event. When I studied astronomy at Carleton University here in Ottawa, I felt as though I was travelling through the mind of God every time the issue of the Big Bang, or whatever other theory, was being discussed. It was the most incredible experience imaginable.

It is a good thing for anyone, scientist or layman, to test the merits of any given theory or ideology. This includes God as well (see Malachi 3:10). To test in a spirit of honest inquiry is not sinful. What is sinful is when both sides point accusatory fingers at each other instead of sharing the indescribable beauty of the universe that has been laid at our feet.

Eric W. Casagrande

198 Louisa Street
Ottawa, Ontario K1R 6Z1

Many Thanks and Please Write!

Since completing my three year term as National Recorder, I have not had the opportunity to express my appreciation in serving the society in that capacity. Mere words cannot describe

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The September 28th Council Meeting

Mary Anne Harrington
National Recorder

The members of National Council met for the fourth and last time in 1991 on Saturday, September 28th. Twenty-one members were in attendance representing ten centres: Edmonton, Halifax, Kingston, Kitchener-Waterloo, London, Montréal, Québec, Toronto, Vancouver and Windsor. Two unattached members were present as well.

Although many issues were discussed at length during the meeting, the society's finances were a major issue and several points need to be brought to your attention. Concerns over the continued existence of both the Endowment Fund and the Centennial Fund were examined. It was felt by the Finance Committee that without linking membership fees to the inflation rate, it would be impossible to maintain these funds. Therefore, National Council has adopted a policy that it will put forward, every year, membership fee increases equal to the rate of inflation in Canada for the previous year. Members will have the opportunity to vote on these proposed increases each year at the Annual Meeting of the society. The proposed new fee schedule that will be put forward at the 1992 Annual Meeting in Calgary will be: Regular - \$40, Youth and Senior - \$24, Life - \$800.

National Secretary, Dr. David Tindall, put forward a list of twenty-seven people who wished to become unattached members of the society. There was one life member, fourteen Canadians, eleven Americans and one foreign member. All were elected to the society. Messier Certificates were awarded to three members. They are Steven D. Manders of the Kingston Centre, and Michael Hollands and Mr. Phillip Kuzniak, both of the Calgary Centre. Membership Certificates were awarded to two members of the Ottawa Centre, Gary Mussar and Richard Wagner.

The Publications Committee submitted a report dealing with concerns raised over the future of the *Journal* made last spring by the Montréal Centre. Although the Publications Committee supported maintaining the current status of the *Journal*, the Montréal Centre still expressed their desire for a further review. Therefore, the Publications Committee will be meeting with members of the Montréal Centre and reporting back at the next meeting.

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Awards of the R.A.S.C. 1991-1992

The R.A.S.C. may, from time to time, confer awards on members in recognition of meritorious service or achievement. Recommendations for such awards should, in most cases, be made through the council of the local centre. Unattached members may submit recommendations, if they so wish, to the National Council for consideration. Centre councils will, of course, submit recommendations as they see fit to the National Council for final approval.

CHANT MEDAL

The Chant Medal of the Society was established in 1940 in appreciation of the great work of the late professor C. A. Chant in furthering the interests of astronomy in Canada. This medal is awarded, not more often than once a year, to any amateur astronomer resident in Canada on the basis of the value of the work for which he or she has carried out in astronomy and closely allied fields of investigation. Nominations (including citations) should reach the National Office by December 31st.

SERVICE AWARD MEDAL

The Service Award was established in 1959, on the recommendation of a special committee of the National Council. This bronze medal is presented to members who have performed outstanding service to a centre or to the national society. Nominations should reach the National Office by December 31st.

KEN CHILTON PRIZE

The Ken Chilton Prize was established in 1977 by the National Council of the society in remembrance of the late K. 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. Nominations should reach the National Office by December 31st.

SIMON NEWCOMB AWARD

The Simon Newcomb Award is named in honour of the famous astronomer Simon Newcomb (1835-1909) who was born in Nova Scotia, and later served for twenty years as Superintendent of the American Ephemeris and National Almanac Office at the United States Naval Observatory in Washington. The award was created in 1978 by the National Council on the initiative of the Halifax Centre. The intent of the Simon Newcomb Award is to recognize literary ability among members of the society who are not professional astronomers. Submit-

ted articles must be original and should not have been previously published in any substantially similar form (although appearances in centre newsletters is permissible).

Who can enter? Any member of the society who does their astronomy purely as a hobby.

Format: The article(s) should be no longer than 2 500 words in length, be written in proper grammatical form, and be presented typewritten and double-spaced. Diagrams need not be in a finished form but should be complete and ready for drafting. Photographs may also be submitted, if possible, with the original negatives. The author(s) name(s) should appear only on the title page and reference to centre affiliation should not appear in the article.

Submission of Entries: Articles must be received by the National Awards Committee between January 1st and March 31st. Members of the centres must first submit their entries to their centre executive for its approval before submission to the National Awards Committee. Unattached members should make their submissions directly to the committee, c/o R.A.S.C. National Office.

Judging: Articles are judged based on their scientific accuracy, originality and literary merit.

Presentation: The award is presented at the General Assembly and remains in the hands of the winner's centre for display until the following April. ☪

Nominations for 1992 R.A.S.C. Officers

By-Law Number One of the society provides for a Nominating Committee composed of three past presidents of the society, determined by National Council, whose duty is to prepare a list of candidates for each elected and appointed office for which an election or appointment must be made.

In 1992, elections for four national offices must be made: President, First Vice-President, Second Vice-President and Treasurer. In addition, the society is in a position to elect a new honorary member. If any member wishes to make suggestions for nominations for any of these offices or for a candidate for honorary membership, they should contact the Chairperson of the Nominating Committee, Dr. Lloyd Higgs, as soon as possible.

Members may, of course, submit formal nominations for any of these offices in accordance with article 6.05(2) of By-Law Number One by delivering a nomination signed by five members

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L'astronomie sur une étoffe

Marc A. Gélinas

Diane Carpentier se définit elle-même comme une astronome amateur... par alliance. Après tout, on ne peut pas vivre 15 ou 20 ans avec un mordu de l'astronomie sans être contaminé. Diane a donc fait ses classes d'astronome amateur. Elle a aussi des goûts et des talents plus personnels, le tissage par exemple. Elle étudie et pratique l'art du tissage au sein d'une guilde locale, elle est membre de l'association des tisserands du Québec et de la Guild of Canadian Weavers. L'expérience qu'elle a acquise en tant que secrétaire de la Société d'astronomie de Montréal lui a permis d'accepter sans crainte le poste de trésorière de sa guilde.

En 1990 Diane expérimentait une technique de tissage inventer par la tisserande britannique Theo Moorman, celle-ci permet d'incruster des motifs dans un tissu sans en affecter la structure. Son âme d'astronome amateur lui fit choisir la planète Saturne comme modèle, en raison sa beauté et du degré de difficulté que cela présentait.

Soudain en octobre 90, la découverte de la Grande Tache Blanche lui donna une idée brillante. Il était encore temps de modifier son patron pour inclure cette tache. C'est ce qu'elle



Diane Carpentier et sa pièce de tissu originale représentant Saturne et la Grande Tache Blanche de 1990.

fit en se basant sur des dessins et des notes d'observation. Elle modifia son patron et tissa la tache. Les taches de Saturne n'apparaissant que tout les 30 ans, et n'étant jamais tout à fait pareilles, la pièce de Diane porte une signature qui restera à jamais reconnaissable. En dépit de sa liberté artistique, la pièce immortalise un moment particulier de l'histoire de Saturne. Dans 30, 60, 90 ans, les photos auront jaunie, les

dessins seront perdus au fond d'archives et, au rythme actuel de la technologie, les images CCD d'aujourd'hui ne trouveront plus de machine pour les lire. Mais quelque part, dans un musée peut-être, la pièce de Diane Carpentier rappellera la Grande Tache Blanche de 1990.

La science apporte la connaissance aux hommes, l'art la répand, c'est leur mémoire collective. ✪

The Discovery of Sprattia

Jeremy B. Tatum
University of Victoria

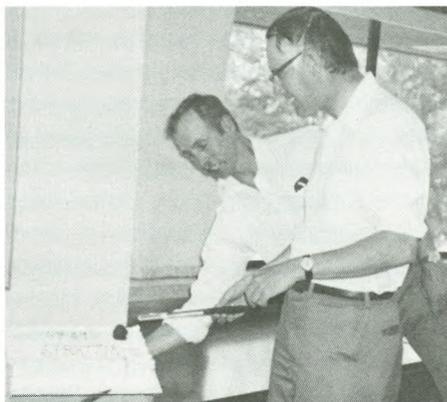
The first asteroid ever discovered in Canada was found on photographs obtained with the University of Victoria's 25 cm Schmidt telescope on October 20th, 1987, by David Balam, and it received the provisional designation 1987 UU2. With only four positions, the prospects seemed marginal, but fortunately several more images, including some predisccovery ones found at the Crimean Astrophysical Observatory, allowed Dave to calculate a preliminary orbit.

At its subsequent apparition in 1989, Balam searched hard for it, but it was too faint. In 1990, at Balam's request, Eleanor Helin searched for it at Palomar, and not only found it then, but also found some images on 1989 plates, after which Balam obtained further images in Victoria. By that time, Gareth Williams of the Minor Planet Center had calculated the orbit back, and had identified observations of an unknown asteroid

reported in 1976 from Argentina which he proved referred to 1987 UU2. By this time, the orbit was secure, and the Minor Planet Center assigned it number 4789. Balam was granted naming rights, and on July 27, 1991, the name was officially announced by the M.P.C. in Cambridge, Mass., and simultaneously by Balam at a little cake-eating ceremony at the University of Victoria.

Balam named the asteroid **Sprattia**, after well-known amateur Chris Spratt of the Victoria Centre. Chris is a prolific observer of variable stars and comets, and a frequent writer for our *Journal* and for *Astronomy* magazine, as well as

being a Chant Medallist. He has greatly encouraged the astrometry programme at UVic. The official citation, published in Minor Planet Circular 18465 of the International Astronomical Union, is reproduced in the August issue of the *Journal*. Chris is a member of the gardening staff at the University of Victoria, so it is particularly appropriate that his asteroid belongs to that family of asteroids known as the "Flora" group. A small cake-eating ceremony was held at the university, with a cake bearing the number and name (4789 Sprattia), topped with a big rum-ball representing the asteroid. ✪



The photograph above shows David Balam (right) congratulating Chris, just after Dave had read out the official citation. The left photo shows Chris just about to dig into his cake. Dave Balam is grinning in the background. Photographs by Alice Newton.

Book Review: The Backyard Astronomer's Guide

Doug Pitcairn
Halifax Centre

People who have acquired an interest in astronomy and would like to start observing the night sky often require a guide book. One of the most common requests I get in astronomy lecturing is "Can you give the name of a good observing text?". Although a list of possible answers would be quite lengthy and bewildering to a novice, I have had some success recommending *Nightwatch* by Terence Dickinson. One cannot help but wonder how many more amateur astronomers would be out there today if parents would give their budding young astronomers a copy of *Nightwatch* and a pair of binoculars instead of that so often miserable "department store" telescope.

Now, fellow R.A.S.C. member Terry Dickinson has combined his considerable writing talents with those of another prominent astronomy writer, Alan Dyer of *Astronomy* magazine. Together, they have produced a follow-up text to *Nightwatch* entitled *The Backyard Astronomer's Guide*. Upon hearing of this text, I had quite high expectations. I am very pleased to say that I have not been disappointed.

From the start of the introduction, to the last star chart, this is without a doubt the most comprehensive visual astronomy aid available. The text is crystal clear in meaning and never deviates from its stated objective, to act "as your guides as you select and use the proper equipment and accessories for many enjoyable nights under the stars." There is none of that old pitfall of so many so-called observing guides, the theory filler. Articles on stellar evolution and the atmosphere of Neptune have little place in a true observing text. The book is a hardbound 240 mm x 280 mm format, loaded with colour images all taken by amateur astrophotographers.

Chapter one introduces the reader to the modern hobby of astronomy. Chapter two continues with the best analysis of binoculars as astronomical instruments that I have ever read.

Chapter three is possibly the showpiece of the book. An excellent all-round description of the various types, makes and models of telescopes available to today's aspiring amateur. My thoughts, upon starting this chapter, wandered back to several of Terry's articles I had read, wherein he showed a definite preference

for modern high quality apochromatic refractors. However, try as I might, I could find no bias. All telescope types were quite fairly analyzed and represented.

Chapter four explores the world of eyepieces. Chapter five looks at other observing aids, including finderscopes, flashlights, dew fighters, and a whole plethora of often never mentioned yet relevant gizmos and devices.

Chapter six, titled "Nine Myths about Telescopes and Observing", is one which would certainly generate discussion at any observer's meeting. If a bias is going to show up anywhere, this would be the place. There are several contentious points contained in this text, but I'll leave these for the reader to find for themselves.

Chapter seven is a well-rounded review of that so often overlooked aspect of amateur astronomy, the naked eye component. Here, once again, the authors' thoroughness is obvious. I know of no naked eye, visually observable effect that they overlooked.

Chapter eight looks at selecting an observing site, and the problems of light pollution. Chapters nine through twelve contain excellent relevant information for observing all the various objects we amateur astronomers love to look at. General overall techniques as well as object specific suggestions abound. I was particularly happy to see a nice review of sketching techniques written by Gregg Thompson.

Chapters thirteen through fifteen cover that scary (to the beginner) field of astrophotography, how to select the proper camera, film and telescope. Which accessories are useful, which are junk, techniques versus results, and what special problems await the novice astrophotographer.

The book concludes with an epilog and a series of useful appendices including a thorough listing of other references, product sources, and astronomical organizations.

There are a few minor errors scattered throughout the book. Deneb and Vega are mislabeled on the chart on page 22. and the references to the comet's dust and gas tails on page 133 are reversed. However, these are very minor points and in no way detract from the importance of this work. I must take exception to one point, however. In the last paragraph of chapter two, they advise people to "avoid 20x80 binoculars for astronomical applications". I know several 20x80 binocular owners who might get a wee upset with this statement. Indeed, I often borrow a pair of 20x80's from a close friend. They are an excellent astronomical instrument and compare very favorably with my own 10x70's (which the authors recommend highly.)

How I envy those starting into the hobby now to have such an excellent and complete manual of observational astronomy. My congratulations to both Terry and Alan for such a superb text. It is sure to take its place alongside Burnham's as a "must own" for any actively observing amateur astronomer. ☪

Come to Calgary!

The Calgary Centre would like to invite you, to Calgary, near the magnificent Rocky Mountains, for the 1992 General Assembly. Accommodations will be at the University of Calgary, and an extended stay can be arranged to take in the eightieth running of the Calgary Exhibition and Stampede, plus numerous other tourist attractions. Some of the planned events:

July 1st: After registering, attend the Canada Day fireworks display and public star night, hosted by the Calgary Centre.

July 2nd: Enjoy a trip to Drumheller to visit the Tyrell Museum of Paleontology and step back in time to when the dinosaurs ruled the Earth. A stop is planned to visit the K/T boundary which marks the extinction of the dinosaurs. In the evening, visit the Alberta Science Centre/Centennial Planetarium featuring a robotic dinosaur exhibit. The Helen Sawyer Hogg public lecture, featuring Dr. Alan Hildebrand, will be held this evening at the planetarium.

July 3rd: Friday morning and afternoon are booked for National Council and various committee meetings. Others are free to either enjoy the Stampede or take a day trip to Banff and Lake Louise. The evening will feature a western barbeque, Murphy slide show and song contest, and tours of the U. of C.-operated Rothney Astrophysical Observatory and the Calgary Centre's Wilson Coulee Observatory.

July 4th: Listen to interesting speakers during the paper sessions planned for Saturday morning and afternoon. A group photo of the delegates will be taken during the noon lunch break. The evening will consist of a formal banquet, an awards presentation and an after-dinner talk by Damien Lemay.

July 5th: On the final day, the Annual Meeting and additional National Council meeting are planned for the morning. The afternoon will feature free astronomical workshops. The final event is a night at the exciting Stampede grandstand show.

To receive your registration package, contact: R.A.S.C. Calgary Centre, c/o Ms. Dennis Goodman, 28 Southland Crescent S.W., Calgary, Alberta, Canada, T2W 0K3. Phone (403) 252-7095 or leave a message at (403) 237-STAR (24 hours). ☪

The *Journal* and the Financial State of the Society

Douglas Hube
Second Vice-President

Society Finances

The R.A.S.C. operates with an annual budget of \$250,000 to serve a membership in excess of 3,000. As is true of any non-profit organization, continuous efforts are made to satisfy the actual and perceived needs of its members, to fulfil its mandate to the general public, and do all of this while striving to balance its budget.

The society's budget has not always been balanced. The Society faces a number of expenses which increase year by year as a result of inflation and other uncontrollable factors. These expenses include salaries, maintenance of office space, postage, office supplies, telephone, travel, etc. Those increased expenses could be handled most easily by *regular* increases in membership fees. Indeed, such increases between 1979 and 1987 kept the fees at, or above, their equivalent 1979 level. During the past four years, fee increases have not kept pace with inflation and the society has had deficits of up to \$17,000 (1989), or at best, small surpluses (nominally \$668 in 1990).

In order to "catch up" it is almost certainly the case that membership fees will have to increase by a significant amount, possibly more than the rate of inflation, in the very near future. A much less painful approach thereafter would be an *automatic annual fee increase* equivalent to the annual inflation rate, with perhaps, small adjustments above and below that rate. Such a policy has been proposed by the National Treasurer and it should be considered sympathetically by members as a simple and rational way to contribute to the financial stability of the society, though by itself it is not a complete solution.

Finances and the *Journal*

There is another way to balance the books, of course, since there are two sides to the ledger: by a reduction in expenditures. National Council is under continuous pressure to reduce expenditures, but it is also under continuous pressure to maintain existing programs and to fund new programs, both at the national and at the centre levels. The largest single expenditure in the society's budget is the production of the *Journal*. For that, and for other reasons to be addressed below, many members have

requested, indeed urged, that National Council, the *Journal* Editor and the Publications Committee review the function and content of the *Journal*, its production and distribution, its frequency of publication, etc. with the goal of reducing expenses and/or increasing revenue.

In 1990, the total expenditures associated directly with the *Journal* were \$64,674. The revenue was \$39,720, a difference of almost \$25,000. Not included in these figures, and often overlooked by those who discuss the subject, is the dollar value of the time *volunteered* by the editor and his assistants. Partially offsetting this, for 1992 and 1993, are grants which have been awarded by N.S.E.R.C. in the amounts of \$10,000 and \$5,000 respectively. Included in the revenue is the \$60 per page which professional astronomers pay for the privilege of having their work published in the *Journal*.

When discussing budgets there are many ways in which one can play the numbers game and produce arguments in support of whatever theory one is promoting. At the risk of being accused of using that ploy, let me remind members of several budgetary facts which are relevant to the matter under discussion. Of the \$32.00 regular membership fee only \$19.20 (60%) is retained by National Office. The remainder goes to the member's centre. Membership fees account for less than 25% of the society's income. For that \$19.20 the member receives *The Observer's Handbook* (which retails for \$15.50); six issues of the **BULLETIN**; six issues of the *Journal* (whose institutional subscription price, including the **BULLETIN** is \$72.00) and which contains approximately four hundred pages of material, which for the most part (see further below) is accessible to the average member; and a myriad of other services and benefits which are easily and often overlooked. Those services and benefits include the following: assistance with the organization and promotion of the annual General Assembly; selection and funding of the Hogg, Northcott and other special lectures; travel funds for attendance at National Council meetings; awards and medals; liability insurance for centre events; funding of exchange speakers between centres; and many others. The *Journal* is but one of *many* benefits of membership in the society.

Without going into the details, members can be assured that all aspects of the production – use of another printer, more or fewer issues per year, more or fewer pages per issue, a different format, desktop publishing, change in the quality of paper, distribution, etc. – have been stud-

ied. As yet, no one has identified a change, which after being carefully investigated, would reduce the expenses by a substantial amount without producing very serious negative side effects. If anyone *can* suggest money-saving changes and support their suggestion with hard facts, National Council would be very pleased to hear from you.

The Nature of the *Journal*

Before changes are suggested for the *Journal*, one must review its purposes and ask if they are being met. There have been frequent comments made to the effect that "The *Journal* does not satisfy the needs of most members of the society." Undoubtedly, most members of the society are not professional astronomers.

The *Journal* is the only Canadian publication devoted to publishing research papers in astronomy. However, it is also the only Canadian publication with a national *and international* circulation devoted to publishing articles of interest to non-professional astronomers. It is, therefore, unique in at least two respects, just as our society is unique in bringing together amateur and professional astronomers. It is one of the very few astronomical publications in *any* country which contains both professional and non-professional papers. As well, we note that the *Journal* has the second longest uninterrupted history of any Canadian scientific publication. To a very large degree, it is the *Journal* which both symbolically, and in fact, elevates the R.A.S.C. above the level of a science *club* to the level of a national and international *society*, with a royal charter to boot.

The *Journal* is not, and was never intended to be, a *magazine* in a class with *Sky & Telescope* or *Astronomy*. Indeed, any attempt to transform the *Journal* into a popular magazine similar to the ones cited would, quite obviously, lead to failure and economic disaster. The *Journal* is also not, and was never intended to be, a purely research *journal* such as *The Astrophysical Journal*. Again, such a transformation would fail. Research journals are very costly and both they and popular magazines have large numbers of *paid* staff. Popular magazines are financially dependent on advertising, another complex and costly component of production which the *journal* does not employ. Quite simply, the *Journal of the R.A.S.C.* is a one-of-a-kind publication which either continues in more-or-less its present format or it ceases to exist. The question remains: does it serve the membership adequately?

There are many ways to interpret that question, and correspondingly many ways to answer it. As others have done, I have taken a selection

of issues (the six issues of 1989, chosen because they were immediately at hand) and sorted the contents into several categories which can be identified as being of interest to professionals, to amateurs or to both. How one makes those identifications, is to some degree a matter of taste. Consider some examples:

- My paper on the spectroscopic orbit of HD93075 (page 26) is of interest only to professionals... and probably not too many of those! Some non-professionals might scan it out of curiosity, but most would not;

- Chris Spratt's articles on meteorites (page 8) and asteroids (page 393) ought to be of interest to both the professional and non-professional communities. Spratt is a professional *gardener*, but is highly respected by professional *astronomers*. The paper by Halliday, et al, is a research paper written by professionals, but it ought to be of *great* interest to amateurs alike;

- The article by Doug George and Robert Morris (page 32) on a telescope control system is aimed at the non-professional, though some professionals will be interested in the subject matter because of its potential use in teaching;

- Some book reviews are of pure research publications, but many others are of more general interest books.

The number of pages devoted to material which I have placed in seven categories is given below:

Professional research papers	66
Professional & non-professional	207
General interest/non-professional	26
Professional book reviews	10
General interest book reviews	14
Anecdotes, history, obituaries	16
Education notes	13

The second category, exemplified by the papers of Spratt (see above), Vallee (on science versus religion, p.8), Madore (space observatories, p. 269) and others, is clearly in the majority. Now an important note. With respect, some of the papers which I have placed in this category are not as "easy" to read as most papers in the previously cited popular magazines. They often place demands on the readers intellect. They speak up, not down, to the reader. They are at the level of presentation of the Hogg and Northcott lectures which are highlights of the General Assemblies at which they are scheduled. They pull the reader ahead rather than holding the reader back. They are, I suggest, precisely the type of paper which *should* dominate the pages of the *Journal*.

I believe that the *Journal* admirably fills the needs of a membership, which consists for the

most part of intelligent lay people who wish to be enlightened, challenged and entertained. Every *issue* may not achieve the desired balance and variety of papers which is desirable, but I suggest that every *volume* does.

If the professional content of the *Journal*, and more generally, material contributed by the professional community, were eliminated, what would we lose? We would lose the N.S.E.R.C. grants; subscriptions from libraries, research institutions and professionals; support from and involvement of much of the professional community; and perhaps, most, importantly, we would lose recognition as a society of international repute.

Final Thoughts

Is the *Journal* really a drain on the society's budget? It is true, as already demonstrated, that if one adds together all the costs and all of the revenue associated with the *Journal* there is a net loss, and a substantial one. But is that a fair way to assess value?

On the debit side of the ledger, there are many activities with associated costs which we do not expect to generate income or in any sense pay for themselves. For example, travel costs for officers and members of council, which came to \$12, 565 in 1990.

The *Journal* is part of a "package". That package includes all phases of the society's operations. In any society or organization there are assets and revenues which cover or offset quite different expenditure items and losses. In the R.A.S.C., the *Observer's Handbook* "subsidizes" other society functions, including (but not exclusively) the *Journal*.

The officers of the society are working to reduce expenses and raise revenues in order to secure the future of the society and in order to maintain the *Journal* which is the one thing, which more than any other, elevates the society to the level of respect which it enjoys worldwide.

I welcome constructive comments of members on the matters raised here, and on others which are relevant to the long-term health of the society. Well-researched *solutions* to actual or perceived problems are particularly sought. I am pleased to acknowledge the assistance of Peter Broughton, David Tindall and others in preparing this article. ♀

Even if only one in a hundred of the ten billion suitable planets has actually got life well under way, there would be more than 100 million such planets. No, it is presumptuous to think that we are alone.

Harlow Shapley
American Astronomer (1885-1972)

Sarnia

At the previous Hidden Hollow Convention last fall at Mansfield, Ohio, Tim Bennett, the centre's vice-president received the Astronomical League Great Lakes Region Award for telescope design in the Newtonian/Cassegrain class for his exemplary equipment. He and J. D. Wilkins received the award for telescope design in the special class for their observatory trailers.

We had the good opportunity to have a speaker exchange with the Toronto Centre last October and November. Steve Spinney, President of that centre, spoke on its educational activities and Guy Nason gave a video presentation on videotaping occultations. C. Joady Ulrich returned the exchange to the Toronto Centre and gave his presentation on "Astronomy on Canvas". Frank Shapley, our national council representative and *Aurora* editor, went to San Diego, California to observe the annular solar eclipse of January 4th, 1992.

Victoria

The members' meeting in June was a great chance for a lot of members to share their latest winter activities. Duncan Munro showed us an easy way to create a null test for large mirrors using the Mosby-Popov test. Rajiv Gupta treated us to his latest deep-sky astrophotos after describing his most recent experience in developing and using a film hypering tank (with help from Duncan and Greg Soderling). Lance Olkovich and Gary Wolanski gave a blow by blow description of the construction of their 25" Dobsonian. Fuzzy, upside-down G.A. slides were presented (only two with the lens cap on!). Dave Dodge showed the latest N.A.S.A. video of Venus' topography based on Magellan data and lastly, a special presentation on CCD's was offered by Greg in the Gordon Southam Observatory where astro-cookies and astro-coffee were served.

Just when you thought that it could not get any better, July's meeting was a special showing of the film "For All Mankind" on the Apollo lunar program, although a lot of us were getting "fried" down south hoping for those elusive seven minutes of darkness.

The feature speaker in August was Terence Dickinson. His presentation, "150 Years of Trends and Traditions in Amateur Astronomy" offered a new appreciation for the enjoyment of observing. In August we also had a mini-Manning Park Star Party following the near dismal conditions experienced on top of Mount Kobau at the Mount Kobau Star Party. A full four nights of clear skies was a perfect end to an almost washed out summer. ♀

The September Council Meeting

(continued from page 3)

Mr. Watson, Chairperson of the Constitution Committee reports that all centres should soon receive copies of the new model centre by-laws. These will be voted on at the next meeting.

Astronomy Day coordinator, Steve Dodson, reported that Astronomy Day 1992 will be Saturday, May 9th. The theme proposed at this time is "Dark Skies - Safe Places - Joining Forces for a More Rewarding Environment". Before the next meeting, Mr. Dodson requests that all centres send him the name and phone number of the spokesperson for their centre's Astronomy Day activities, whether they are holding it on May 9th or have selected another date for the event. Send this information, addressed to the Astronomy Day Chairperson care of the National Office. Members should be aware that the society is increasing its public liability insurance coverage from \$1,000,000 to \$2,000,000 as several centres have been required to have this level of coverage in order to hold public events.

Final preparations were made for the society's new publication, *The Beginner's Observing Guide - 1992*, designed by Leo Enright of the Kingston Centre. It will be available from the printers at Queen's University in late November and will retail for \$5.00 per copy.

A report from Don Hladiuk of the Calgary Centre stated that plans were well under way for the 1992 General Assembly. Also, a report from Mary Lou Whitehorne of the Halifax Centre provided a tentative schedule of events for the 1993 General Assembly in Halifax.

The next meeting has been scheduled for Saturday, February 15th, 1992. Remember that every centre is represented on National Council. If you have any questions or concerns regarding the society, please contact your centre's National Council Representative. If you are not sure who your representative is, just check the inside from cover of the *Journal*. ☼

Nominations for 1992 R.A.S.C. Officers

(continued from page 3)

along with a written statement of acceptance by the candidate to the society's Secretary at least sixty days before the 1992 General Assembly.

If you have suggestions for the Nominating Committee, write to: Dr. Lloyd Higgs, Dominion Radio Astrophysical Observatory, P.O. Box 248, Penticton, British Columbia V2A 6K3. Suggestions should be received before December 31st, 1991. ☼

Letters to the Editor

(continued from page 2)

the enriching experience gained in striking balances between being overly verbose and being too succinct – the problem of separating "wheat from chaff" as it were.

As a suggestion, from the National Recorder's position, his/her task would be simplified if participants' reports were pre-written and condensed for their entry into the minutes of National Council. Possibly also, motions to be advanced at council meetings should be pre-written for clarity and avoidance of misinterpretation through auditory errors. Between identifying speakers on the tape recorder and deciphering my copious notes, plus the addition of my Oriental flavour to the logical(?) English grammatical syntax, the final renditions of the minutes were almost comprehensible.

In my convoluted fashion, through the **BULLETIN**, I sincerely thank National Council and the Publications Committee for their patience and forbearance with my endeavours in journalistic recording.

I am especially indebted to Ms. Rosemary Freeman, Ms. Mary Grey, Dr. Roy Bishop, Dr. Lloyd Higgs, Mr. Damien Lemay, Dr. Jeremy Tatum, Dr. David Tindall and others for the encouragement I received in undertaking the recorder's position with the Royal Astronomical Society of Canada. I also wish to acknowledge with gratitude the support and congratulations I had received from my own centre in Windsor.

Henry Lee

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Humour Appreciated

I enjoyed the column "Major U.S. Research University Discovers New Element" in the August issue of the R.A.S.C. **BULLETIN**. Perhaps your readers would enjoy the following book:

Droll Science
Robert L. Weber (editor)
Hunawa Press, 1987

The book collects many gems, mostly from scientific journals. The chapter analyzing a meeting in terms of thermodynamics is particularly memorable.

Funny, isn't it, how scientists tend to take all the joy and interest out of the very subjects that they love. That comment wasn't meant harshly (I have two science degrees) just as an observation. Keep up the levity!

Catherine Cousineau
3122 Timbermill Street
Gloucester, Ontario K1T 1R4 ☼

Terrestrial and Celestial Fireworks

John Iverson
Winnipeg Centre

The date was August 31st, 1991 and we were camping at Morden's Meadows, which is located on the west shore of Lake Winnipeg, about 110 km north of the city of Winnipeg.

There was a cool wind blowing strongly. We went down to the beach just after 10 P.M. to watch the fireworks display at the adjacent beach. It was very dark and you could barely make out the whitecaps, although you could hear the waves crashing on the shore as the wind persisted. As the fireworks continued, we observed an unusual orange sail-shaped object out over the black, wind-blown water. As we gazed at this strange object I realized that it was the last quarter moon mystically rising out of the water. There were northern lights present as well, but they were dim and not very active.

It was now 10:30 P.M. As we watched the Moon rise slowly out of the water, the aurora decided it was time to put on a show of their own. It was akin to being under a glass dome and having pails of milk dumped on top in rapid succession. It spread from the zenith, in the constellation of Cygnus, in all directions, like a grass fire out of control, and danced around the sky as if it were being teased by strong winds. Within minutes the sky was ablaze with aurora and the words "awesome" and "unbelievable" could be heard all around. It was so bright now that we could see plainly and someone even suggested playing football. There was a pause in the man-made fireworks. I guess the organizers realized that they could not compete with Mother Nature.

The lights continued to dance all around the sky for some time, coming down in waves as being blown in by the powerful wind. It was now getting close to 11 P.M. The fireworks finally resumed, and at their conclusion we headed back to the trailer, guided by the natural light of the night sky. What a "fireworks" display we had all witnessed!

I ventured out of the trailer occasionally to see if the aurora was subsiding, but it continued to dance all around, although not so brightly until about 12:30 A.M. ☼

*How bright and beautiful a comet is as it flies
past our planet – provided it does fly past it.*

Isaac Asimov
American Biochemist/Author