



August
août
1993

Volume 3
Number 4

The Royal
Astronomical Society
of Canada

BULLETIN

La Société
Royale d'Astronomie
du Canada

Charting a Course for the Society's Future - IV

The Society of the Future?

Derek Baker
Hamilton Centre

The Activity-Response Based Approach

It is indeed a tall order to ask our national society to evaluate all of its services, policies, procedures, and attitudes. However, reorganizing these is a necessity in the 1990's if the society is to meet the real needs of its most demanding customer—the membership.

The vast majority of the members' needs (both novice and expert), as a learner can be met by the local centre. Thus, the national aspect of our organization must justify its existence and expenditures, on a constant basis, by employing an impressive pool of Canadian talent, critical sources of information, communication links, and of course, money. How can our national society plug in to the activities of its members and centres in order to be an effective facilitator of the R.A.S.C.? Let us explore a few hypothetical situations that will look at some of the topics that I have touched upon.

Example #1

Imagine that an amateur or professional astronomer, or a centre, recognizes a need for an observing project designed to monitor the cataclysmic variable, Variable X. The project is designed, using local references plus the assistance of professional astronomers and experienced members, and then a call for participants is published in the R.A.S.C.'s national publica-

tion. After that, there is a strong response from a number of members across the country. Contacts between the organizer and the interested participants are made.

Research is done, and as it progresses, results and impressions are published in the national publication and further support from newly interested parties is solicited.

After the completion of the observations, professionals/experts are provided to 'coach' the participants, and then papers are presented at local centre meetings and at the General Assembly. A summary is published in the national newsletter and recommendations for further study are made. Out of this comes good public relations for both the participants and the national society, useful astronomical information, plenty of material for the newsletter, motivation for more involvement by R.A.S.C. members, an improved liaison with any professions involved, and pride in the R.A.S.C.'s accomplishments.

Example #2:

A group of amateurs in several centres have begun to observe that curious cloud structures have been forming and dissipating in Jupiter's south equatorial zone. The planetary columnist in the national newsletter hears of this and writes a column in the newsletter. This sparks the interest of a large group of amateurs in centre X, and several others in other parts of the country. They put forth a proposal to photograph Jupiter on a nightly basis through colour filters using their local centre telescopes, over the period of two years. The proposal is published in the national newsletter, and it is discovered that a number of other centres are interested in coordinating such a project.

The national society strikes a deal with the centres involved to partially fund the purchase of

filters/film, and in one case, a CCD imaging system. The centres involved agree to publish updates in the newsletter and present talks to nearby centres in exchange for the support. Professional astronomers and astrophotography/CCD experts write articles in the newsletter to supplement the background research done by each centre's participants, and the project gets under way, with the planetary columnist coordinating the efforts.

After the project is done, the group puts together a summary paper with the help of their 'coaches' and present a paper at the G.A. All the while, the progress of the participants is narrated in each centre's newsletter.

These situations are meant to illustrate several key points.

a) There is a need for a national organization to provide backing for productive learning ventures, a communications network, expert advice, a nation-wide forum for the exchange of ideas, and even moral support.

b) The initiation of ideas may come from national personnel or centre members, however real support from the national organization is not triggered until a group of participants take the initiative to do background research, assess equipment needs, and put forth a detailed proposal. The responsibility is really with the participants who do the work; the national society concentrates its energy on being a willing supporter of the grass roots interests and activities of the members.

c) Funding, support, and advice from the national council is linked with the project participants' promise that they will put something back into the society via reports and concrete results.

(continued on page 12)



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 R.A.S.C. 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 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 (416) 924-7973.

Supplement to the *Journal*
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Printing: University of Toronto Press

Printed on paper containing 50% pre-consumer recycled paper and at least 5% post-consumer de-inked fibre.

Deadline for the October issue is October 15th.

Event Horizon

October 23

West Coast Amateur Astronomy Conference
H.R. MacMillan Planetarium
Vancouver, British Columbia
Contact: Vancouver Centre
c/o 1100 Chestnut Street
Vancouver, British Columbia V6J 3J9 ☼

Letters to the Editor

No Sexism in Vancouver

I am writing in response to Mary Lou Whitehorne's column in the June issue of the **BULLETIN**, "Reflections—Where are the Women?"

As a young woman pursuing a life of science, I have never once been a victim of sexism. Moreover, I have found nothing but support from men, including everyone from my boyfriend to the astronomy director at my university. The Vancouver Centre especially has been a very friendly and helpful group of men and women. When I joined a couple of years ago, at the age of seventeen, our centre's president was, in fact, a woman. The director of the Gordon Southam Observatory, David Dodge, was an incredible help to me in the summer of 1988 when he took me on as a volunteer to open the place to visitors on the weekends. I am, I was told, the first female to volunteer there. The reason that I never made it to the meetings was not because "I feel uncomfortable and stupid around all those highly educated men", but because my night school courses kept me busy those nights.

Maybe it has to do with the unfortunate experience of sexual harassment Ms. Whitehorne has had to face which makes her opinion different from mine. I have never experienced sexism at the Vancouver Centre or in any of my science classes where the male to female ratio differ-

ence can be obvious. I do know, however, that more women my age are turning to science for careers. Many correspondence ads in magazines such as *Astronomy* are from young women looking for penpals with the same interest. I believe that one sure way to see an increase in the numbers of young women joining the R.A.S.C. is to make it known that the society is also for them. Bring your daughters and nieces and their friends to star parties and meetings, or set up a display at your local Y.W.C.A. Once introduced to astronomy, it is hard to resist!

Diane Chaytor

316 - 1504 56th Street, Delta,
British Columbia V4L 2A8

Elitist Men's Club?

Mary Lou Whitehorne's "Reflections—Where are the Women?" in the June **BULLETIN** was certainly thought-provoking. Her observation that women are a minority in the R.A.S.C. is irrefutable. She is also correct, I believe, in claiming that science has long been viewed as a male domain and women have been subtly or overtly discouraged from following such pursuits.

However, she might be overly optimistic in expecting to see a noticeable increase in young women joining the R.A.S.C. due to today's more enlightened attitudes. It would be my guess that far too many parents still consider astronomy to be a "boy's" hobby and do not seriously encourage girls that do show an interest. Similarly, check out any high school science club and see how many girls are involved. Probably more than ten or twenty years ago, but I would be surprised if there has been a great increase. Perhaps we should allow social liberalization another decade or so before evaluating the R.A.S.C.'s sexual ratio.

It is unfortunate when Ms. Whitehorne implies that many women cannot be R.A.S.C. members because they work for a living and/or have housework to do, etc. Is Ms. Whitehorne seriously suggesting that a significant number of

would-be female society members are so completely oppressed? My local astronomy club has female members who are single, married, working (both in and out of the home) and with children. In every instance, each individual is a very involved astronomer. They are interested in astronomy so they find the time to participate. Incidentally, this description also applies to some of our non-female members!

With regard to sexism in the R.A.S.C., I would be interested to know more specifically what Mary Lou is referring to. If she has encountered "unthinking and ill-considered words and actions" at a local level, is it fair to impugn the R.A.S.C. as a whole?

The role of women in society is changing and stereotypes are breaking down—perhaps not as quickly as some would like. A large majority of the R.A.S.C. may very well be male, but does this make it an "elitist men's club"? Sorry, I do not buy it!

Clive Gibbons

516 Bridgeman Avenue
Burlington, Ontario L7R 2V4

Classroom Astronomers Wanted

We wanted to let members of the R.A.S.C. know about a new project in astronomy education being developed at the Astronomical Society of the Pacific that may be of as much interest to Canadian astronomers as to their American colleagues. Project ASTRO is designed to explore the potential for amateur and professional astronomers to visit fourth to ninth grade classrooms and help students get excited about astronomy and science in general. Visiting astronomers, equipped with activities and resources, would come to a school and help with classroom learning, science projects, a science club, evening observing sessions, etc.

The initial testing will take place in California, but our ultimate hope is to develop materials and a program that could be used anywhere. As the first phase, we are hoping to benefit from the

experiences of astronomers (amateur and professionals) who have tried such visits—more than once or twice—on their own. We would like to ask them to fill out a brief questionnaire and help advise us on what went well and not-so-well during their visits. Anyone who would like to participate in this research phase is asked to call (415) 337-1100, FAX (415) 337-5205, or to write the undersigned.

Andrew Fraknoi
Astronomical Society of the Pacific
390 Ashton Avenue, San Francisco,
California 94112, U.S.A. ☉

The Visual Discovery of Supernova 1993I

Rev. Robert Evans
Honorary Member

IC 5270 is a thirteenth magnitude spiral galaxy on the northern edge of a group of galaxies in the constellation of Grus. Its inclination to the line of sight is similar to that of M31 in Andromeda. This constellation is not observable in February and March due to the position of the Sun. When it reappears in April's morning sky there is pressure on me to observe the brighter galaxies as quickly as possible to check for any supernovæ which may have appeared during the unobserved period.

Because they are still fairly low in the sky, the fainter galaxies tend to be ignored on this first observing run. For this reason, the rise and early maximum light of SN 1993I were missed, as these events would have occurred in mid-April. IC 5270 was not observed until the second observing run on these galaxies, which occurred around the Moon's first quarter on April 30.8 UT. On this occasion, the supernova was instantly recognizable, shining brightly around fourteenth magnitude, a little west of the central glow of the galaxy. It was found about half an hour before the first light of day on the morning of May 1st. The observing session had already been in progress for ninety minutes. I had been having trouble with some cloud and some loss of clarity due to a slightly damp secondary mirror and had been tempted to give up several times. If I had not persisted, the supernova would not have been found that day.

Rob McNaught was notified quickly. He made a short exposure in the twilight with the Uppsala Southern Schmidt camera. From this plate an exact position was measured and confirmation of the discovery was made. Within the next day, spectra were obtained, revealing this to be a type Ia supernova, a little past maximum light. ☉

Sexism in the R.A.S.C.?

Michael S. F. Watson
Second Vice-President

I could not agree more strongly with Mary Lou Whitehorne ("Reflections—Where are the Women?"; *BULLETIN*, June 1993) that sexism—and, indeed, any kind of discrimination that is based on an individual's attributes or characteristics other than her or his merit—is to be condemned and discouraged. I also agree with her that it is a shame that there are not more women involved both in astronomy in general and in the society in particular.

This has been a source of disappointment to me over the years, and I have often wondered how the situation could be ameliorated. My own concern about gender equality lead me to pioneer the use of "gender-neutral" language in the society's by-laws, policies and resolutions, an initiative that is now readily and virtually universally accepted throughout the R.A.S.C.

Having said that, however, I disagree equally strongly with Mary Lou's condemnation of the R.A.S.C. as a society that is, by its very nature, a "elitist men's club" that is plagued by unconscious sexism. Is there an excessive preponderance of men in the R.A.S.C. when compared with the general population? Of course there is. Are there men in the society who are biased against women? Undoubtedly there are, as there are most likely women who are biased against men, just as in any large population of individuals anywhere in our North American society. However, the reason for the relative lack of women in our organization probably lies in another direction, one that the author herself pointed out; that is, that women as a whole are discouraged by society from pursuing science in school and as careers (and, one may add, as a hobby). I have, however, been pleased to see women active in centres, on centre councils, occupying executive positions in centres, as national council representatives, on the national council executive, and even as president of the society.

The author offers no evidence—even anecdotal—to support her theory that the R.A.S.C. is an "elitist men's club" in which "sexism rear[s] its ugly head". She asserts that "society makes it nearly impossible for a woman to participate actively in organizations such as ours", not by offering any evidence, but rather assumes an answer to a rhetorical question "How many 'male egos' would take kindly (and trustingly) to their wives going out observing at all hours of the night, in remote places, with a bunch of men?" and then implies that men, and R.A.S.C. men

specifically, consider housework and minding children to be women's work and beneath their dignity. Do some men—and women—hold these attitudes? Of course they do. However, the author does not offer any evidence to warrant her obvious conclusion, which she wishes her readers to accept, that these are attitudes that predominate in the R.A.S.C. Simply making an accusation does not prove a thesis.

While acknowledging that the R.A.S.C. does welcome women, and that it is an "enlightened organization", Mary Lou states, that "sexism can occasionally rear its ugly head" in such an organization, although "most of it is completely unintentional and springs from unthinking and ill-considered words and actions". When I read this, I thought to myself that, at last, her readers would be given examples of what she means; but no, she cites not a single example of such words or actions, much less any indication of what we are used to hearing referred to as 'systemic sexism'.

The R.A.S.C. consists overwhelmingly of amateur astronomers, most of whom have absolutely no formal training in astronomy and are far from "elitist", or "highly educated" in astronomy, other than by dint of their own interest and efforts in the field. I count myself among them, and I differ from Mary Lou in that her own efforts and formal training, which resulted this year in her being a most worthy recipient of the society's Chant Medal, put her in a class to which I cannot aspire. I do not cite Mary Lou's education and achievements, which I admire immensely, as an example of "elitist" discrimination against those such as I who are less educated in the field than is she. In the same way it is inappropriate, and ultimately insulting and destructive, to label those men who exhibit the same intelligence and drive as sexist simply by reason of such efforts and the fact that they are male. Is not such a condemnation itself evidence of sexism?

Let us work positively together to make the society a welcome and comfortable organization for **all** women and men who are interested in astronomy. While expressing legitimate concern about the under representation of any group in the R.A.S.C., let us not insult our members—or any subset of our members—with unfounded accusations of discriminatory attitudes or conduct that are unsupported by evidence; and for goodness sake let us not compound the error by citing this response itself as evidence of sexism. One may legitimately disagree with portions of an expressed point of view without being guilty of inappropriate discrimination! ☉

Lessons from a Partial Solar Eclipse

Todd Lohvinenko
Winnipeg Centre

During the partial solar eclipse on May 21st of this year, observations made at Winnipeg indicated the apparent size of the Moon to be 1.2 times that of the Sun. The eclipse, as seen from Winnipeg, began at 12h32 and ended at 13h52 UT. These times are inferred based on four observations. First contact occurred at a vertex angle (v.a.) of 297° and last contact at a v.a. of 22° . The Moon was transiting the Sun at an angle of 21.9° north from east.

Visual observation of the Moon crossing the solar disk was the preferred method, as this method is easy, quick and does not take too much setup time. A disk was drawn having a radius of 4.4 cm with a known centre and defined orientation. The telescope used was a Celestron C8 with a star diagonal and a 40 mm eyepiece. By the method described in my article, *Palm's Up!* (BULLETIN, October 1991), four observations were made. (See Figure 1 at right.) Based on them, the scientific purpose of the observation program was accomplished.

The determination of the apparent size of the Moon with respect to the Sun was done by looking at all four observations and finding the centre, and thus the radius, of each arc. By measuring the radius of each arc, the radius of the Moon, as drawn, was determined to be 5.2 cm. The ratio of the Sun's radius to that of the Moon was, thus, 4.4 : 5.2 or 1 : 1.2. ☛

New Hubble Slides

A slide and information set featuring twenty new images from the Hubble Space Telescope has just been released by the Astronomical Society of the Pacific. The slides include colour views of the huge storm seen in the atmosphere of Saturn, the best view ever of the surface of Mars from Earth, a complex jet in the Orion Nebula, stars at the heart of 47 Tucanae, the inner jet of M87, a dramatic view of a starburst galaxy and the puzzling "X" structure marking a possible black hole in the Whirlpool Galaxy. The slides are accompanied by a sixteen page book-let with detailed captions and a reading list.

Sets are \$US 35.95 (including postage and handling to Canada) and can be ordered from:
A.S.P. HST Slide Orders
390 Ashton Avenue
San Francisco, California 94112 ☛

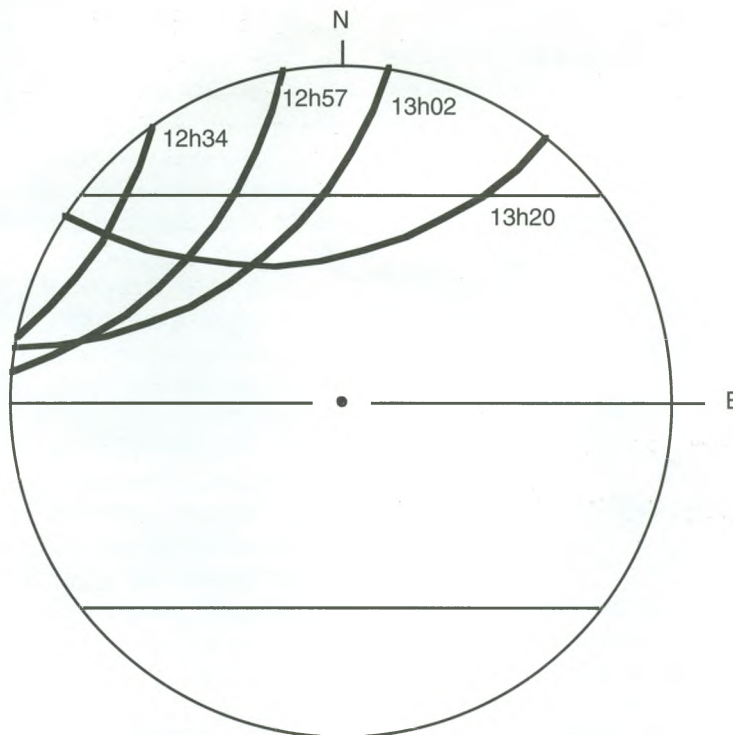


Figure 1. A full-size reproduction of the observations. The times to the right of each arc segment indicate the Universal Time at which the observation was made.

Gracias, Merci, Danke Schon, and Thanks!

Mary Lou Whitehorne
Chairperson, Halifax G.A. Organizing Committee

Ahhh!!! It is over at last and I can finally put my feet up and read a good book (like David Levy's biography of Clyde Tombaugh)! Now the G.A. withdrawal symptoms are setting in and the only cure is to tell myself that I will get another fix next year in St. John's. Personally, I can hardly wait to sample the smorgasbord that the '94 G.A. will offer, especially since I will not have to do any of the work!

The '93 G.A. was, apparently, a successful event and all indications are that everyone enjoyed themselves. In particular, the weather that we ordered up for the G.A. was most impressive. The society's business meetings even ran smoothly with no major hiccoughs. This would seem to be the appropriate place to report briefly on numbers in attendance but since we do not have all the paperwork from Mount Saint Vincent in hand yet, I shall wait until more dust has settled before I start quoting numbers.

I would like to thank everyone who came to Halifax and participated in this year's gathering—without you, there would have been no G.A.! So, THANK YOU to all attendees, national

council members, volunteers, donors, supporters, the Mount's conference office staff and audio visual department and anybody else that is hiding out there in the woodwork. I must offer a special "hats off" to David Levy for his noteworthy musical contribution to the song contest event; I am not sure how, but he managed to get everybody to sing along with him!

The Halifax Centre is delighted to have had the opportunity to host the society for this G.A. We really enjoyed meeting everyone; some for the first time and, of course, for others, the special pleasure of seeing old friends again.

Business necessities aside, this annual gathering of like-minded astronomy enthusiasts is vital to the health of the R.A.S.C. We really are one big, happy (well, mostly happy!) and slightly noisy family. This strong, national cohesiveness is what makes the R.A.S.C. the unique organization that it is. For those of you who have never participated in a General Assembly before, I would strongly recommend that you try to attend the 1994 G.A. in St. John's, Newfoundland. There is just nothing else like it! See you there, eh, byes? ☛

Light is always propagated in empty space with a definite velocity, "c", which is independent of the state of motion of the emitting body.

Albert Einstein
German/American physicist (1879 – 1955)

Astronomy Week In Kingston

Bill Broderick
Kingston Centre

Astronomy Day/Week provides a great opportunity to "bring astronomy to the people" and once again, the Kingston Centre members went all out to do just that.

Our activities commenced with a public star party at Macdonald Park on Kingston's waterfront on May 1st. This had been publicized both by media releases and radio and television announcements. As a result of the fine advance publicity, an estimated 200 people attended the star party. We had at least eight telescopes set up. The weather was clear, and people got some great views of the moon, Jupiter, etc. "Wow!" "Oh, that's neat!" and, "Hey, I can see the cloud belts!" were frequent remarks heard as people put their eye to this telescope or that.

We had about fifty flyers available to hand out to people advertising other events taking place the following week; our upcoming general meeting on May 7th at which Terry Dickinson would be speaking and our Frontenac Mall display on the following Saturday. We soon found that fifty flyers were far too few; we could easily have handed out four times that many! We also had a small quantity of centre brochures on hand and a few of these were handed out or taken as well.

On Monday, the *Whig-Standard* carried an article about the star night, stating that "hundreds of people" had attended. The reporter, had been present for practically the whole evening, circulating around and talking to people, both the public and telescope operators and occasionally taking a look himself. For the most part the article was well-written, although it did contain some errors, the most serious being that it put our upcoming mall display in the wrong mall! (It might be a good idea to have a special hand-out for any members of the press who attend such events.) The article also mentioned our Friday, May 7th meeting, at which Terry Dickinson would be speaking.

Terry Dickinson's talk attracted nearly 200 people including over 140 non-members. The crowd was so large that Terry had to give his talk twice! The R.A.S.C. members retired to another room where we could have our regular centre meeting while Terry gave a "public" presentation. Later we went back upstairs and Terry gave a more "in depth" talk geared to the members.

Terry and his long-time friend and colleague Alan Dyer, visited the Las Campanas Observa-

tory high in the Atacama Desert of Chile, for ten days in March and April at the invitation of the University of Toronto. They found the seeing there truly incredible—every night clear!—and the slides that Terry brought back were equally incredible. The daytime sky was a deep, dark blue, not the milky white we are used to.

Besides their own equipment, Terry and Alan had the use of the University of Toronto Southern Observatory's 61 cm Helen Sawyer Hogg Telescope. Terry had many superlative shots of the southern Milky Way, Magellanic Clouds, the Coal Sack, the Southern Cross, and other celestial sights never seen from Canada. He also captured Venus at inferior conjunction on April 1st, many fine views of the Las Campanas Observatory complex itself (which contains forty-two telescopes on five mountains), views of the surrounding area, and several shots of some small cat-like foxes which at one point managed to wheedle a roast beef sandwich out of him. This was a tremendously interesting presentation for both the public and R.A.S.C. members and Terry gets a special vote of thanks for putting it on for us, particularly in conjunction with Astronomy Day/Week.

"The crowd was so large that Terry had to give his talk twice!"

The next day, Saturday, May 8th, a number of members were on hand for our mall display, held at the Frontenac Mall in Kingston. The display was impressive indeed, with lots of material well-presented. Leo Enright had a number of examples of his fine astrophotography, Hein and Jean van Asperen brought out their solar system model on which can be displayed the current positions of the planets, and Bill Broderick set up our newly-created display posters. The light pollution items seemed to attract particular attention, something to take note of. Steven Manders showed off "Dance Of The Planets" on his computer, and we had a number of telescopes on display. Again, we had a good supply of brochures and flyers available, many of which were picked up or handed out. This kind of material really seems to help.

In addition to our centre brochure, which outlines the benefits of R.A.S.C. membership (and now also includes an application form), we also had on hand a new brochure entitled "Do You Need A Speaker...?" This brochure explains that our centre can provide a speaker on some aspect of astronomy for almost any occasion, as well as telescopes for a "private star party". For adult clubs and groups, a fee of

between \$50 and \$100 (negotiable) is payable to the centre; for youth groups, schools and such, there is no charge.

As a result of our Astronomy Day/Week activities, we have gained, at the time of writing, at least four new members, and two renewals of memberships which had lapsed, bringing our Kingston Centre membership to sixty-two, the largest since the centre's formation in 1961! We also received very favourable media and press attention and we had a heck of a lot of fun. We cannot ask for much more than that, can we?

In conclusion, I would like to extend, once more, a big THANK YOU to everyone who helped in any way to make our Astronomy Day/Week activities so successful. ☺

An Ocean of Stars

Jeremy Tatum
Journal Editor

One of the more extraordinary stories to come out of Victoria in recently was that of a gentleman by the name of Bob Lord, who, while travelling on one of the ferries in the Strait of Georgia, was most unfortunately suddenly overcome by a severe attack of mal de mer. He rushed to the railing to unload his last meal, but in his haste he overlooked the Law of Conservation of Momentum, and over the rail he went.

The unfortunate Mr. Lord spent the next eight hours bobbing up and down in the chilly waters of the Pacific, during which he drifted some thirty kilometres from the starting point of his adventures. The story has a happy ending, for he was picked up, apparently none the worse for wear. His \$30 watch, too, suffered no ill effects from its thirty hours' dunking in salt water. All the experts are absolutely astonished that anyone could survive for half an hour, let alone for eight. His wife, though greatly relieved, was not impressed. "What a turkey!", she said at a news conference.

Now, just imagine it. Eight hours in totally dark skies and no trees or obstructions for 360° all around the horizon, and nothing to do other than look upwards. What a splendid opportunity for appreciating the beauty of the night sky! Nor did Mr. Lord neglect to take advantage of it. His first comment? "It was a beautiful night—all kinds of shooting stars! I don't mean to sound casual about it, but I had lots of time to contemplate." Now there's a dedicated observer! ☺

Only time and money stand between us and knowing the composition of every gene in the human genome.

Francis Crick
British biophysicist/geneticist (1986)

Meeting Highlights

Joe Yurchesyn
Halifax Centre
National Council Representative

National Council Meetings

Fees: The treasurer's report to council requested a \$4.00 fee increase in the regular membership fee (which would bring it to \$36.00), to be voted on at the annual meeting. This was brought on primarily due to the use of interest income to offset operating costs and to travel costs, which seem to have grown disproportionately, especially over the last five years or so. In addition, efforts would be taken to better control and perhaps reduce travel costs.

Handbooks: The 1994 Observer's Handbook will have a retail price of \$17.00 (G.S.T. included). A press run of 13 000 copies has been ordered, the same as for the 1993 handbooks. There were 800 – 900 unsold 1992 handbooks, about 2% of the total.

Beginner's Observing Guides: The new revised Beginner's Observing guide will have a press run of 2 750 copies. Of the \$12,000 budgeted, preparation and printing costs will amount to \$11,500, and the remaining \$500 will be spent on promotion. The books will be off the press by late July, and info packs will be available to the centres by Labour Day. Centre pricing will be \$4.00 per copy or \$3.50 per copy if the number ordered is greater than 40% of the centre membership. A \$5.00 per copy consignment price will also be available. The retail sale price will be \$10.00 (including G.S.T.).

Speaker Travel Assistance Program: An updated assistance program was implemented for travel money to allow centres to bring in out-of-town speakers.

Budget Process: The finance committee must now table a budget that demonstrates a deficit situation with the existing fee structure, before a balanced budget using increased membership fees would be considered.

Journal Editor: Halifax Centre member Dr. David Turner was appointed to a five year term as the new *Journal* editor. He will begin his duties with the February 1994 issue.

Membership Survey: A summary of the membership survey is now available on a 1.44 Mb DOS-formatted disk.

The 1995 G.A.: The invitation from the Windsor Centre to host the 1995 General Assembly was accepted.

Eclipse Committee: The books have been closed on the 1991 Solar Eclipse Expedition, and the committee has been disbanded. A bot-

tom line profit of \$8,626.74 was realized, which was forwarded to the 1994 Eclipse Committee.

New Officers: Dr. David Tindall completed his second consecutive term as national secretary and was replaced by Dr. Randall Brooks, who despite his Ottawa domicile, continues as a member of the Halifax Centre.

Travel Costs: Travel costs will be capped at \$1,600 for each of the next two meetings for all attending national council representatives. These fees will only be paid if the centre does not have any other representation at the council meeting.

New Annual Treasurer's Form: A form was approved for centres to use when reporting their financial information for the annual report. It is different from the present listing in the annual report, in that membership fees will be sub-divided into regular fees, regular surcharge fees, and special surcharge fees. The revenue from Handbook sales has been expanded to include the sales of Beginner's Observing Guides and calendars and a new category, fundraising, has been added.

Publications: In a motion that unexpectedly received very little debate, the publications committee was instructed to look at the pros and cons of merging the **BULLETIN** and the *Journal* into a single publication.

Liability Insurance: Damien Lemay indicated that an insurance agent member in the Québec Centre felt that the society's insurance contract may not fully cover its members as was thought. This will be investigated.

Society History: Peter Broughton has written a history of the R.A.S.C. The plan is for the society to purchase 1 000 copies at a pre-publication cost of 75% of the retail price of \$34.95 (or \$26.21). If the 1 000 copies sell at the pre-publication price, the society will break even, and a small royalty may be obtained from the several hundred extra copies that the publisher will print for separate distribution. Only if sales are poor, does the society stand to lose any money. Funding will come from the following, in order of preference: pre-publication orders, cash on hand, a promissory note, and a bank loan.

Graze Expedition: Edmonton Centre is planning a graze observation trip to the extreme northwestern corner of Alberta on November 28th. This graze is unique, in that both the northern and southern limits are visible from North America. The estimated cost is \$2,200, of which the International Occultation Timing Association is offering \$200 and the Edmonton Centre is funding \$1,000. They asked the national council for the remaining \$1,000. After much discussion, it was found that the trip members (about ten) were not funding anything

personally, and therefore it was felt that a value of \$500 would be more appropriate. However, in the end it was decided to have the Edmonton Centre complete a grant request, which would be reviewed at the fall council meeting.

The Annual Meeting

For the most part, the annual meeting consisted mostly of committee reports, votes on five by-law amendments, and a vote on higher membership fees for 1994.

The first by-law amendment requires sixty days notice to the national secretary for a resolution to change membership fees. The intention of this change is to prevent a radical change in fees on the spur of the moment by the small number of members of the society that usually attend the annual meeting. The vote (including proxies) was 161 for, 43 against, for 79%, well above the required 67%.

The second amendment was to delete the category of senior membership. The intention of this change was to save money, since the senior membership fee is too low to offset costs. The vote (including proxies) was 142 for, 47 against, for 75%, again, more than the required 67%.

The third amendment, to establish the membership and promotion committee and the fourth, relating to proxy votes were carried with little discussion. The fifth amendment, to not guarantee society publications to members who pay fees between January 31st and July 31st was carried with a small amendment.

The proposed membership fee increase took on less than lively debate. The vote (including proxies) was 104 for, 65 against, for 62%. Only a simple majority was required on this vote. The new fees are \$36.00 regular, \$22.50 youth, and \$900.00 life. ☼

Simple as the law of gravity now appears, and beautifully in accordance with all of the observations of the past and of present times, consider what it has cost of intellectual study. Copernicus, Galileo, Kepler, Euler, Lagrange, Laplace, all the great names which have exalted the character of man, by carrying out trains of reasoning unparalleled in every other science; these and a host of others, each of whom might have been the Newton of another field, have all labored to work out, the consequences which resulted from that single law which he discovered. All that the human mind has produced—the brightest in genius, the most persevering in application, has been lavished on the details of the law of gravity.

Charles Babbage
English inventor/mathematician (1792 – 1871)

Put Nothing In; Expect Nothing Out

Dennis Ryan
St. John's Centre

In the past few issues of the **BULLETIN**, we seem to have fallen headlong into a discussion about the R.A.S.C. and its future, with some people putting considerable effort into making their views known on the issue. A lot of people obviously feel very strongly about the R.A.S.C. and its future, and it is to their credit that they do.

However, there is a very revealing and important question that needs to be asked: what qualifications are needed to get into the R.A.S.C.? Is the potential member given a written exam, or subjected to an oral exam by the local executive? Must they show mastery of the telescope, expertise in astrophotography or perhaps a knowledge of astronomical formulas?

No, the only qualification for joining the R.A.S.C. and becoming a "member in good standing" is to pay the yearly membership fee to a centre treasurer. That is it. In return, they will hand you an Observer's Handbook and a copy of the last centre newsletter, put your name on the centre membership list and forward your name to the national office so that you will receive the **BULLETIN** and the *Journal*. This means that everyone, from a person with a Ph.D., who has an intimate knowledge of astronomical formulas, to someone who may have done no more than look at pictures in an astronomy book, once they have plunked down their cold, hard cash, is a member.

So, the burning question remains: what do members want? What can we give them that will make them, the following year, want to plunk down more money to join again. The shocking answer is, nothing! People who join a centre expecting to get something out of it, some "service" to be provided, have the wrong attitude. Whether we like it or not, it does seem to be a law of human activity that before we receive, we must give. A centre is not one person. In fact, according to R.A.S.C. rules, there must be at least twenty-five people to make up a centre, though that rule is not a hard and fast one. A centre is composed of people with differing degrees of interest in astronomy who, once they have paid their membership fees, have "equal rights under the law".

Basic to the structure of a centre is that once a new member has paid their membership fees and the other centre members get to know him or her, the new member can borrow centre

equipment, get involved with organizing public events such as Astronomy Day, go out to the centre's observing site and share the experience of the sky with fellow members. Centres exist due to camaraderie.

It is true that many members of a centre will be very busy with work, family and other responsibilities, but an active centre, under the general guidance of an enthusiastic executive, will present enough opportunities for any member who wants to, to get involved, initiate ideas and ultimately contribute. Any member who pays his or her fee and then goes home and "sits on their duff" for a year and perhaps attends a few meetings and yet expects the executive to come out on those nights and dole out to them a portion of whatever it is that they expect for their fees, might as well give up their membership.

I was on the Montreal Centre's executive for many years and participated and helped organize many events. What came out of this was both an enjoyable time shared with others and a sense of accomplishment. It brought out talents in me that I did not even realize that I had. Not only that, but I have seen the same effect in others who have contributed in a like fashion.

I came to St. John's and decided to challenge myself by becoming president. The executive's work during those years, and the continuing work of subsequent executives, has made many in the R.A.S.C. raise an eyebrow in astonishment at what our centre has accomplished. This has been the result of members working to-

gether and getting satisfaction out of a mutually beneficial activity.

Last year we held a Christmas party. The combined gifts of food from our members, some of which had obviously taken a lot of time to prepare, made a party to remember. Recently, Peter Broughton honoured us by visiting our centre. Again, we called on members to bring food to the reception. I had misgivings about asking them so soon after the Christmas party, but once again we had a night to remember.

With all due respect to those seemingly apprehensive members, let us not get into a great and worrying philosophical discussion over what the R.A.S.C. gives to its members or what its members give to the R.A.S.C. This is a contradiction in terms, because despite what some may say, **the membership is the R.A.S.C.** An organization exist as a legal entity, but it is those involved who give that organization existence.

If the membership is active and doing things, from organizing public events to star parties to observing astronomical events like meteor showers, then so is the R.A.S.C. If the membership does nothing, then so does the R.A.S.C.

Once you lay down your membership fee, you are not a customer of the R.A.S.C. which must provide some service, you **are** the R.A.S.C.—you become part of it. The longer you stay a member the more this seems. How much you want to get involved determines how much the R.A.S.C. gets done (and how much you enjoy your year)! ☼

Just for Laughs: Deep Sky Observers

Randy Pakan
Edmonton Centre
reprinted from *Stardust*

What They Say

I can see a hint of a spiral arm.
I can see a faint tail on this comet.
I can see one other galaxy in this cluster.

This object must be misplotted.
Use your averted vision.
It's a challenge object.
It's an easy object.

I'm recording it as only being suspected.
This star has a hint of nebulosity around it.
I've got it!
It was a great night.
It was an O.K. night.
You didn't miss much.
It was a poor night.

What They Mean

I saw a spiral arm in a photo of it this afternoon.
It's a comet—there's a 90% chance it has a tail.
However many galaxies you see, add one and that's how many I see.
I'm lost but I'm not going to admit it.
You must be blind as a bat!
I don't know what I'm doing.
It's a hard object, but I want you to think I'm a really good observer.
I'm sick of looking for it and I'm taking it off my list.
I'm dewed up.
I found the field so I know it's there.
There was aurora only 80% of the time.
There was a momentary break in the clouds.
It poured all night.
I had to set fire to my scope to keep warm. ☼

Contact by Carl Sagan: A Book Review

Peter Jedicke
London Centre
reprinted from *Astronomy London*

Set your mind at ease right away: this is a work of fiction. For respected scientist Carl Sagan, who has written some of the best astronomically oriented non-fiction of the past quarter century (and has the Pulitzer Prize to show for it), this is really a bold departure. It immediately brings up a few cynical possibilities: maybe Sagan did not write the book but some publisher talked him into putting his name on it so it would be guaranteed to hit the best seller list, or maybe Carl and his agent figured people would think it was for real and there would be a supernova of controversy and they could both afford European cars, or maybe the real contact Sagan was looking for was in Hollywood.

Do not bet on it! Even if he did not write every word, (and his agent surely will not miss any payments on his Ferrari) this book is as good as *Cosmos* and compares favourably with his best, *The Dragons of Eden*. In fact, it would have made a fine cerebral science fiction movie. Once again, you could be cynical and say that the topic of this book was the only thing about which he could ever write a decent story, but this seems a cheap criticism by the time you get wrapped up in the action.

It is about the first contact with extraterrestrial intelligence. No surprise, right? Of course, the contact comes, not with a silvery ship screeching in for an unannounced visit on the south lawn of the White House, but with a radio message. After decoding it, scientists discover that it contains the plans for some kind of device. They build it, without really knowing for sure what it is. Naturally, it is a transdimensional intragalactic transit vehicle! Some scientists go on a quick jaunt around the Milky Way.

So far, it is vintage Sagan and it is not until late in the book (although there are plenty of hints that something like this will happen) does the book really take a strange twist. The scientists return at essentially the same time as they left, so nobody really believes that they went anywhere. As the final chapters dissolve into the sunset, the scientists, looking for some way to prove that they were away, seem to have found such proof. I suppose that it is a happy ending, although there is just enough ambiguity that you can wonder that no one will believe them, no matter how much proof they gather.

Over and above the technical details that will wow the "electro-dweebs", this book has a hefty dose of "touchy-feely" sensitivity that you do not have to be a Betazoid to appreciate. The main character is Elenor Arroway, who has been a science and math keener since grade school. She is the astronomer in charge of the SETI program at a VLA-type radio telescope farm. It is her team that discovers the intelligent signal and she helps to figure out the multi-levelled message as well as being one of the travellers who hops about the Milky Way. Nevertheless, her main problem is unscientific: her father died when she was young and it is not until she comes back from the beyond that she comes to grips with the soap opera in her life. "She had studied the universe all her life, but had overlooked its clearest message: For small creatures such as we, the vastness is bearable only through love." Get out the handkerchiefs, ladies. Married life must agree with Carl. Even if you hate schmaltz, you should not find it cloying and the science ought to carry this book for you.

"Not even Sagan can resist the idea of somehow travelling faster than light."

There are a few other interesting points to watch for as well. To begin with, the characters are mostly professional astronomers and it is tempting to wonder if Sagan squeezed some of his contacts from the I.A.U., N.S.F., J.P.L., N.A.S.A., P.B.S., C.I.A., or whatever, into his fantasy. If so, the international community of specialists must have their ears burning because there are plenty of bits of dirt in here. Of course, you would need to be one of them to recognize who is who, so I must forego any detailed commentary.

Another major theme is faith and religion. Sagan is the last person I would expect to be sympathetic towards belief systems like evangelical Christianity, but he handles this theme with a deft sensitivity. Furthermore, the very strongest point in the book is that he cunningly arranges for the scientists' experience, which we readers are supposed to believe happened in the framework of the novel, to have no more factual support than the theological revelations of the evangelists. Arroway finds herself making claims about what happened to her that smack of divine intervention, and she knows it.

The completion of the travelling device and the quick trip to everywhere takes place on December 31st, 1999. Sagan mentions that some people claim that the millennium ends a

year later than that, but I am one of the 1999/2000 advocates (rather than one the 2000/2001 supporters), so this found favour with me. There is a lot of hoopla and end-of-the-world hysteria in the story at that point, as you would expect.

Finally, there is a question of funding for big science projects like SETI. Obviously, Sagan is in favour and the impression that I got was that he thinks that the science community ought to be more popular in the everyday culture of modern society and that this would solve most of our problems. In the story, international politics play a significant role and the scientists pretty much have to beg for funding. It is partly the aforementioned hype about the coming millennium that makes the politicians willing to fund an expensive project like the construction of the galactic cabriolet, and after that one quick trip they are unwilling to prove it worked by funding another one.

Besides being somewhat predictable, the book has only one fault. Not even Sagan can resist the idea of somehow travelling faster than light (or you can call it denying the passage of time, if you wish). The breathless enormity of the scientists' trip through black holes and other celestial delight reminded me of Arthur C. Clarke's *Childhood's End*, another, older book whose plot reached for a grand, sweeping scale of vision at the end and left me more than a little dizzy. For me, if there is going to be an unimaginable vastness in a science fiction novel, it needs to be near the beginning of the book so that I can get used to it.

The tone of the book is vintage Sagan. You can almost see his nose thrusting into the void as the questing humans step out among the galactic socialists. If someone else wrote this book, they sure fooled me. Sagan's best turn of phrase is to call the main character a "wonder junkie". The wonder really is there.

Although already eight years old, this book will not be out of date for a few years yet unless, of course, a real message from extraterrestrial civilizations is detected. I cannot help but think that reality will have more surprises in store for us than any book. ☺

One day, on tearing off some old bark [from a tree], I saw two rare beetles, and seized one in each hand. Then I saw a third and new kind, which I could not bear to lose, so I popped the one which I held in my right hand into my mouth. Alas! It ejected some intensely acrid fluid, which burnt my tongue so that I was forced to spit the beetle out, which was lost, as was the third one.

Charles Darwin
English naturalist/evolutionist (1809 - 1882)

Helen Sawyer Hogg Distinguished Visitorship

Peter Broughton
National President

As a memorial tribute to Dr. Hogg, the Faculty of Arts and Sciences and the Department of Astronomy at the University of Toronto have established the *Helen Sawyer Hogg Distinguished Visitorship*. The visitorship will bring distinguished female scientists to the university on a regular basis to deliver both specialist and public lectures, and to interact with faculty members and graduate students in the astrophysical and related sciences. The distinguished visitor will also participate in the Faculty of Arts and Sciences' *Women in Science Forum*.

By providing both concentrated interaction with specialists and broader public education, the visitorship will continue Professor Hogg's tradition of encouraging a public understanding of the wonders of the universe while inspiring women to pursue scientific careers.

The visitorship will take place a minimum of once every three years, and annually if funds permit. Members of the R.A.S.C. who wish to receive more information or who wish to make a donation, may contact:

Professor Ernest Seaquist
Department of Astronomy
University of Toronto
Toronto, Ontario
M5S 1A1
(416) 978-3150

Receipts for income tax purposes will be provided by the University of Toronto. ☼

Not Just Another Pretty Calendar

Rajiv Gupta
Vancouver Centre

By the time you read this, the 1994 R.A.S.C. Observer's Calendar should be available for purchase. This new R.A.S.C. publication, which complements the R.A.S.C.'s other publications, has attracted much interest from members.

The 1994 calendar will be similar to the 1993 version. The calendar provides "at a glance" astronomical data for an observer. Most of this information is lunar as each calendar day contains a graphical representation of the Moon's phase and size, along with its rising and setting times. Other selected astronomical events are included. Additions being currently contemplated for the 1994 calendar are Julian Day numbers and Jovian satellite double transits.

The calendar features black-and-white photographs taken by members of the R.A.S.C. (primarily John Mirtle of the Calgary Centre and myself). It is hoped that more Canadian astrophotographers will become involved in the future, and that the calendar will become a national forum for astrophotographers.

The History

The calendar was "born" at a meeting of the Vancouver Centre council in the summer of 1991, when June Kirkcaldy, who was then our president, suggested that I produce a calendar for the Vancouver Centre members using some of my astrophotos. After some arm-twisting, I agreed to proceed with the project. The result

was the 1992 Vancouver Centre Observer's Calendar. This calendar was made financially viable by the current president of the Vancouver Centre, Glenn Skene, who managed to find advertisers.

When our local 1992 Calendar was distributed at the Calgary G.A., several individuals, including R.A.S.C. president Peter Broughton and the chairperson of the publications committee, Doug Hube, expressed interest in having a national version for 1993. The main problem that needed to be overcome was that the rising and setting times in the 1992 calendar were specific to Vancouver and would not be valid across the country. The solution was to give times for two standard locations from which times for all centres, accurate to fifteen minutes, could be extracted.

Members responded positively to the 1993 National Calendar (the Vancouver Centre also produced a local version), buying 80% of the 1 000 calendars printed. We hope that this level of support continues.

The Calendar Computer Program

Although the photos are the most striking aspect of the calendar, most of the time involved in its production went into the writing of a computer program to generate the monthly pages. I wanted the calendar to provide the information that I always extracted from the Observer's Handbook when planning my observing, namely the Moon's current circumstances. Also, I wanted the program to be completely automatic, generating the grids for any month or year simply by inputting the month, year, and geographical coordinates.

The current version of the calendar program consists of 1 500 lines of Fortran code which produce Postscript output which can in turn be sent to a laser printer to produce the monthly pages. About 5 000 lines of Postscript are produced for an entire calendar. The Fortran program calls some Pascal routines written by O. Montenbruck and T. Pflieger (see the book *Astronomy on the Personal Computer*).

Accuracy was a major consideration in the development of the programs. The current version computes rising and setting times which are accurate to 0.2 seconds, although these are rounded to the nearest minute in the calendar. Another bit of overkill is undoubtedly the variable Moon size the calendar gives. In spite of all these features, the program takes under ten seconds to produce the Postscript output for an entire year.

(continued on page 12)



Former national president goes off the deep end! Franklin Loehde appears to be enjoying his latest hobby, judging by the smile(?) on his face!

Un mot sur Ciel Info

Les membres de la S.R.A.C. sont invités à s'abonner à *Ciel Info*, publié tous les trimestres en français (et en anglais sous le titre de *Sky News*) par le Musée national des sciences et de la technologie. Cette publication, écrite pour les latitudes canadiennes et destinée à toute la famille, existe depuis plus de quinze ans. Grâce à ses descriptions claires des phénomènes astronomiques de chaque mois, elle met les planètes et les constellations—et même les pluies de météores—à la portée de tous. Des cartes du ciel aident les lecteurs à s'orienter et à suivre l'évolution du ciel nocturne. Qu'on soit jeune de cœur ou jeune tout court, on trouvera plaisir à lire cette publication gratuite (quoique les dons soient les bienvenus), dont les abonnés se recrutent notamment parmi les enseignants, les chefs de troupes scoutes et guides, et les

animateurs de planétariums et d'observatoires.

L'auteure, Mary Grey, est conservatrice principale des sciences physiques au Musée national des sciences et de la technologie; elle a consacré près de trente ans de sa vie à communiquer son amour des étoiles. Mme Grey, qui est membre de la société canadienne d'astronomie et de la société royale d'astronomie du Canada, a reçu une médaille de la S.R.A.C. pour ses états de service et une prime au mérite de la Fonction Publique du Canada. Cette personnalité bien connue dans les milieux de l'astronomie, qui fut récemment présidente nationale de la S.R.A.C., est souvent invitée à la radio nationale.

Pour faire porter votre nom sur la liste d'envoi, veuillez faire parvenir vos nom et adresse (sans oublier le code postal) à *Ciel Info*, Musée national des sciences et de la technologie, C.P. 9724, Terminus d'Ottawa, Ottawa (Ontario), K1G 5A3. ✪

About Sky News

R.A.S.C. members are invited to subscribe to *Sky News*, produced quarterly in English, and in French under the title *Ciel Info*, by the National Museum of Science and Technology. Written for Canadian latitudes and at a level that accommodates the whole family, it has been published for over fifteen years. Its clear description of each month's astronomical features brings planets and constellations—even meteor showers—within everyone's reach. Sky maps help readers orient themselves and follow the changes in the night sky. Subscribers to this free publication (donations are welcome) range from the very young to the young at heart and include educators such as teachers, guide and scout leaders, and planetarium and observatory instructors.

Author Mary Grey, senior curator of physical sciences at the National Museum of Science and Technology, has devoted almost thirty years to communicating her love of the stars. A member of both the Canadian Astronomical Society and the Royal Astronomical Society of Canada, Ms. Grey was awarded the Service Award Medal of the R.A.S.C. as well as the Merit Award of the Public Service of Canada. Widely known in the field of astronomy, she is a frequent guest on national radio and past president of the R.A.S.C.

To be added to the mailing list, please send your name and address, including postal code, to *Sky News*, National Museum of Science and Technology, P.O. Box 9724, Ottawa Terminal, Ottawa, Ontario, K1G 5A3. ✪

I send herewith unto his Majesty the strangest piece of news (as I may justly call it) that he hath ever yet received from any part of the world; which is the annexed book (come abroad this very day) of the Mathematical Professor of Padua (the Siderius Nuncius by Galileo), who by the help of an optical instrument (which both enlargeth and approximateth the object) invented first in Flanders, and bettered by himself, hath discovered four new planets rolling about the sphere of Jupiter besides many other unknown fixed stars; likewise the true nature of the Via Lactæ [Milky Way]... and lastely, that the moon is not spherical, but endued with many prominences... So, as upon the whole subject he hath first overthrowen all former astronomy—for we must have a new sphere to save appearances—and next all astrology. For the first of the new planets must vary the judicial part, and why may there not yet be more?

Henry Wooten

English architect/military enginner (c. 1610)

Sky News

WINTER 1993

NATIONAL MUSEUM OF SCIENCE AND TECHNOLOGY

Dear Stargazer:

The results of last summer's mailing list survey were gratifying; many more readers responded than anticipated. We appreciate your interest, your comments and support.

With this issue of *Sky News* we embark on another year—the fifth with this format. A number of changes have taken place since the launch of the publication, some a result of your suggestions, others relating to staff.

Your letters and comments concerning content are read with interest. As often as possible we will continue to adopt your suggestions, but as mentioned some months ago, we have decided to raise the material at an introductory level.

With regards to staff changes, I particularly miss the input of Gail Blimke, who is no longer involved with *Sky News*. Gail designed the layout for our publication and held out for the use of colour. I am sure you join me in wishing her well as she moves on to other projects.

On behalf of your current *Sky News* "crew" I wish each of you peace, health and happiness—and clear skies for 1993.

Mary Grey
Curator, Astronomy

Myths to Enhance Winter Stargazing

Lavishly endowed with brilliant stars and a splendid array of constellations, the winter sky is also imbued with a rich body of myth and legend. The following are Greek in origin:

Orion: Although described as "the tallest and most beautiful of men," Orion appears to have been an ill-fated lover. Legend relates that as he attempted to elope with Merope, her disapproving father put out Orion's eyes and left him on the seashore to die. By following the sound of hammer on anvil, Orion made his way to the forge of Vulcan, god of fire and metalworking, who dispatched a Cyclops to carry Orion to a mountain top. There he stood facing the Sun until his sight was restored. According to another tale Orion fell in love with the moon-goddess. The sun-god did not approve and, flooding his golden rays over Orion, invited the moon-goddess to test her skill in archery by shooting arrows at the glowing mark. Winging a shaft, she inadvertently slew her lover hidden in the gleaming rays. Anguished, she appealed to Jove,

who placed Orion in the heavens so that she might gaze upon him as she sails in her silver chariot. In yet another legend Jupiter turned the Pleiades (seven beautiful sisters) into doves to enable them to escape the attentions of Orion.

Gemini: Pollux and Castor, twin sons of Jupiter and Leda, were identical—with one important exception: Pollux was immortal, Castor was not. The brothers conducted themselves courageously in battle, Pollux gaining fame as a horseman, Castor as a pugilist. But Castor was slain by rivals over the attentions of sisters the twins were pursuing. Devastated, Pollux could not face life without his twin. A compassionate Jupiter decreed that the two could be together by alternating days on earth with days in Hades. Eventually they were placed side by side in the heavens.

Taurus: Jupiter became enamoured of the beautiful Europa. He assumed the form of a snow-white Bull and the impetuous Europa, charmed by the lovely creature, climbed on his back. Taking advantage of the situation, Jupiter bore her across the seas to Crete. The event is commemorated on earth with the naming of a continent, and in the heavens by the constellation Taurus. ✪



The Seven Sisters

Located in the shoulder of Taurus is the Pleiades, the finest of all star clusters. In the words of Martha Evans Martin: "Men of fancy have compared the Pleiades to a swarm of fireflies, to bees, to a rosette of diamonds, and to shining dew-drops, while less ecstatic minds have compared them to hens and chickens and the seven virgins." The latter may have inspired the painting of the "Seven Sisters" from which this illustration was adapted.

The cover of a recent issue of *Sky News*. All centres will be receiving sample copies of this publication at about the same time that members receive this issue of the BULLETIN.

Keen for the Deep Sky?

Alister Ling
Edmonton Centre

The Webb Society, which is based in England, is probably best known for its series of deep-sky observing handbooks. Behind this publishing enterprise is a vibrant society of some 300 people, some of whom originate in Canada and the United States. A number of these include the former regular contributors to Dave Eicher's *Deep Sky* magazine. The society's thrust is to promote deep-sky observing via the open communication of amateurs through its three regular publications: the *Quarterly Journal*, the biannual *Observing Section Reports*, and the *Deep Sky Observer*.

Deep Sky Observer is in the style of the old *Deep Sky* magazine. There are letters to the editor, reviews of star parties (mostly American), casual level articles about particular objects or groups of objects, and discussions about deep-sky observing itself. The format, like the other publications, is folded A4, on semi-glossy stock that allows photographic reproductions, and runs about thirty-two pages per issue.

The layout of the *Observing Section Reports* is such that object types are separated which allows the reader to concentrate on their favourite galaxies or clusters, etc. There are numerous sketches, of the style of the Webb handbooks, though digital scanning has done a lot to improve the quality of the reproductions. Each subsection lists the log entries from the various contributors. For example: Planetary nebula NGC 2440: "Looks like a small spiral galaxy at low power. Two elongated 'nuclei' are evident; these are parallel and extended in PA 60. The outer envelope is much fainter and is about 1' long, extending SW-NE. Very high contrast with the O III filter; much dimmer with the H-Beta."

The considerably thicker *Quarterly Journal* (about fifty pages) carries slightly more "technical" articles. These include: detailed visual studies of galaxy groups; items of historical interest; investigations into catalogue errors; photometry of clusters; equipment and techniques pertaining to deep-sky observing. There are also reviews of books and of the annual meeting. The latter takes place in England and often features rather big name speakers, such as Halton Arp.

If I may make a crude comparison, the three publications put together resemble the old *Deep Sky* in terms of content, but lack the glossy pictures. Memberships are available for £12.50 (surface) or £15.50 (airmail) from Michael Swan, 194 Foundry Lane, Freemantle, Southampton, Hampshire, Great Britain SO1 3LE ☼

Another Step Towards a New Planetarium in Nova Scotia

Mary Lou Whitehorne
Halifax Centre

In 1990 the Nova Scotia Planetarium Advisory Committee (NSPAC) began as a sub-committee of the Halifax Centre. The objectives of NSPAC are to promote the establishment and oversee the operation of a major planetarium for Nova Scotia. NSPAC got off to a very slow start but the past twelve months have seen considerable activity by the group. NSPAC has incorporated as a society under the Nova Scotia Societies Act and has been working towards producing a feasibility study for a major new planetarium in the province.

We have been lucky in attracting some very energetic and capable people to our board of directors. Chief among these is John Hault, who was instrumental in getting the Edmonton Space Sciences Centre built. We also have a legal firm (Armstrong Lynch) and an accounting firm (Levy Casey McLean) donating their expertise to the cause. We are presently working with a printing firm who has donated \$1,000 for the purpose of printing up stationery, business cards, pamphlets, etc. for us, as well as helping with the design of a logo.

One year ago we invited several consulting firms to submit proposals for our study. We received some very fine proposals and selected the firm of Price Waterhouse to do the work. Then we ran up against some real difficulty finding the required money. We pounded a lot of pavement and knocked on a lot of doors. It seemed as if we were the square peg that did not fit in the round hole, so we bounced all over every government department office that we could think of until we hit upon the Federal Provincial Cooperation Agreement on Cultural Development, which is administered by the Federal Department of Communications. At last we found the folks who said "yes" to our application for funding!

With their funding of \$25,000 plus the \$3,000 very generously donated by members of the Halifax Centre, NSPAC is proceeding with phase I of our feasibility study. Work is due to commence in mid-March and be completed by the end of August. Phase I of the study is the most important aspect of the study. It will look at themes, content, programming, operational status and location for the facility. Also included will be an analysis to determine the likely market

penetration, capital and operating costs, revenue generation, sources of support for the planetarium, and organizational structure for the facility. This will encompass the possibility of a planetarium as a stand-alone facility or as part of a multi-venue complex.

Now that we have government support we should be able to procure additional funding from some private corporations that have expressed an interest in our project. This will allow us to proceed with phases II and III, which will involve preliminary architectural design for the planetarium and the final, finished report. At the same time we will also be working on broadening our base of operations and extending our contacts within the local business community. Public relations is fast becoming a priority as the need becomes ever greater to raise awareness and support from the educational, tourism, and public sectors of the province.

For the moment we are gleefully studying projection equipment; the pros and cons of one versus another, the costs and capabilities of each as we picture what each would do in our proposed planetarium. We have a dream; a beautiful vision of what a planetarium could mean for the people of Nova Scotia. We are determined to sell this vision and bring our dream to life for the benefit of everyone. Obviously, we have our work cut out for us, but we think our project has a lot of merit. It is our belief that a planetarium will be a tremendous asset to Nova Scotia. It will most certainly make a wonderful meeting place for the Halifax Centre! We feel that our study will come back positively and then we will really have to get to work to raise the millions necessary to build a first class planetarium for Nova Scotia. ☼

A large party, who had crossed from the American side, wound up the steep ascent from the place where the boat had left them; in doing so their backs were turned to the cataracts, and as they approached the summit our party was the principal object before them. They all stood perfectly still to look at us... Then they advanced in a body, and one or two of them began to examine (wrong side up) the work of the sketcher, in doing which they stood precisely between him and his object... Some among them next began to question us as to how long we had been at the falls;... In return we learnt that they were just arrived; yet not one of them (they were eight) ever turned the head, even for a moment, to look at the most stupendous spectacle [Niagara Falls] that nature has to show.

Frances Trollope
English writer (1780 - 1863)

Charting a Course... - IV

(Continued from page 1)

d) The role that the national newsletter and its panel of expert columnists takes in motivating and coordinating the membership, and keeping everyone up-to-date with topical news.

e) The national society's efforts will be seen as: i) responsive to the needs and interests of the membership, ii) supportive of several critical stages in the "learning cycle", iii) being apolitical, and iv) a wise use of money.

I think that this process could apply to the way individual centres operate as well. The topics for activities need not be limited to observational programmes, but may include historical research, equipment restoration, observatory construction, equipment upgrading, regional seminars, star parties, etc.

In this model the national society has three primary roles: a) providing the influx of ideas, and activity-specific information through a newsletter to a national audience, b) having mechanisms and funds in place to immediately respond by subsidizing clearly defined centre/group goals, and c) providing a national 'soap-box/forum' to share experiences using a vibrant and affable publication.

A Summary of My Recommendations

The R.A.S.C. needs to be reorganized and mechanisms put in place that encourage the active participation of all members, and encourages the perception that the national society is a willing facilitator of the essential needs and learning cycles of the enthusiastic amateur astronomers. To accomplish this:

1) The models I have applied (essential needs and the learning cycle) should be used to evaluate all of the services presently available to the membership. In order to make meaningful changes in line with the membership's needs, the centres and the national council must be willing to accept that some areas will not be changed, some will be extensively restructured, and certain items will be discontinued.

2) The essential needs and the learning cycle be employed in every aspect of decision making, including how activities are planned, how publications are organized, and monies are dispensed.

3) The *Journal* must be discontinued in its present form and the present **BULLETIN** be reworked and substantially enlarged. Canvassing should be done obtain columnists to write regular articles on observing, equipment, computer, humour, history and other topics.

4) A nation-wide speaker's bank be set up

with the help of professional astronomers who would solicit speakers from universities and the centres for the support of centre meetings, seminars, and G.A. organizers. Travel costs would be subsidized by the speaker's travel fund.

5) A centre newsletter fund be set up to support these activities in the centres and to allow each centre to have access to the newsletters from all of the other centres.

6) Committees will have to be set up to design programs and put into place the mechanisms for ensuring that the national society promotes the core activities of each centre, services the essential needs of amateur astronomers, actively supports the learning cycle of the pro-active astronomer, and implements an activity-response based approach to react to the initiatives and aspirations of the membership.

7) The R.A.S.C. must decentralize much of its decision-making, empowering the members or centres to dictate on their own initiative the programs that are to be carried out. The national organization must see its role as that of a facilitator and coordinator ready and willing to jump to the assistance of enthusiastic and energetic amateur or professional astronomers.

In order to fit in with the system I have proposed, the idea of "unattached membership" comes into question. There are many people living far away from the population centres, so at first glance, it looks like we need that class of membership. Second, there are members who, for political reasons, have decided to avoid affiliation with a nearby centre. Nevertheless, they could be left out of the processes of support that I have described, and are presently at a disadvantage. By ensuring that a strong national publication is implemented, the isolated member can be made part of the activity-response mechanism with ease.

Conclusion

I thank you for your interest and willingness to read through this series. I hope that the observations, models, and proposals will provide an apolitical framework for the revitalization of our society. It is imperative that significant (non-cosmetic) changes in services and processes are made at a national level now.

I would be pleased to receive feedback from any member regarding my ideas or to clarify any questions you may have. I can be reached at:

Derek S. Baker
1482 Barnett Drive
Burlington, Ontario
L7P 2R2
(416) 336-9258

I thank you for giving me the opportunity to give input on these issues! ☺

Not Just Another Pretty Calendar

(continued from page 9)

The 1994 Calendar

The 1994 calendar will be available from centres by the end of the summer. Unattached members may order a calendar by sending a cheque for \$7.35 payable to the R.A.S.C., Vancouver Centre, to:

R.A.S.C. Vancouver Centre
Attn: National Calendar
1100 Chestnut Street
Vancouver, British Columbia
V6J 3J9

If you have any comments or suggestions, please write to me at the above address, or E-mail me at: r.gupta@mtsg.ubc.ca. If you have any photos that you would like to have considered for a future issue, send 8" by 10" black-and-white prints to me at the above address. ☺

A Plan for the Improvement of English Spelling

Mark Twain

For example, in Year 1 that useless letter 'c' would be dropped to be replaced either by 'k' or 's', and likewise 'x' would no longer be part of the alphabet. The only case in which 'c' would be retained would be the 'ch' formation, which will be dealt with later. Year 2 might reform 'w' spelling, so that "which" and "one" would take the same konsonant, while Year 3 might well abolish 'y' replacing it with 'i' and Year 4 might fix the "g/j" anomaly for all.

Generally, then, the improvement would continue year by year with Year 5 doing away with useless double konsonants, and Years 6-12 or so modifying vowels and the remaining voiced and unvoiced konsonants. By Year 15 or so, it would finally be possible to make use of the redundant letters 'c', 'y' and 'x' - by now just a memory in the minds of our old dodderers - to replace 'ch', 'sh', and 'th' respectively.

Finally, then, after some 20 years of orthographic reform, we would have a logical, coherent spelling in use throughout the English-speaking world. ☺

In the Next Issue...

☞ **Michael Watson** begins a series of articles on the results of the membership survey. Publications will be the topic of the first article.

☞ Join **Rajiv Gupta** as he looks at the tricks of the trade involved in hypering film. ☺