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Secretary's Report

By now all members should have received their copies of the 1989 CASCA MEMBERSHIP DIRECTORY. Please don’t throw your old Directory away, as the CASCA Constitution is NOT reproduced in the new directory, as it was in the 1988 version. This is a good time then (although a better time would have been four weeks ago!) to let me know of any errors, alterations or omissions in the membership directory. One serious error that has already come to light is that electronic mail addresses on the CDN network are listed in the directory as ending in the sub-domain .CA while in fact they should end in .CDN as given in last year's directory. Thus, for example, CNet. "USER@DRAO.NRC.CA" should read "USER@DRAO.NRC.CDN". I apologize for this error, which arose because of confusion in my own mind with the new-style BITNET addresses which DO include @ domains ending in .CA.

May I remind any student members who have completed their studies that even the generous gesture of paying ordinary membership fees instead of student membership fees is not sufficient cause for your membership to be so transferred. Please notify me that you have completed your studies and wish to become an ordinary member of the Society in order that this change can take effect.

At the recent meeting of the CASCA Board on December 2, the following new members and membership changes were unanimously accepted:

Ordinary Membership

George Aitken
David Muchmore
Charles Proffitt
Harvey Richardson
Ranga Sreenivasan
Masahide Takada-Hidai
Rachel Webster

Transferring from student to ordinary membership

David Bohlender
Alex Fullerton
David Holmgren
David Jeffery
Lee Oates
Leslie J. Sage

Student Membership

Louis Asselin
Ian Bonnell
Bradley Gibson
André Grandchamps
Luc Grondin
Éric Poisson
Michel-Robert Rivard
Robert Slawson
Richard Smegal
Luc Turride

We welcome all the new members to the Society. It is pleasing to note that the Université de Montréal will have a strong contingent (it is now the largest astronomical centre in the country) to host the upcoming annual meeting of CASCA in Montréal next June 27-29.
Speaking of the Montréal meeting, a feature of this meeting will be ‘CFHT Day’ on June 27, to highlight the first decade of research with that telescope. With the support of an NRC grant, CASCA is inviting keynote speakers from France, Hawaii and Canada to attend this celebration, and the program looks like a very stimulating one.

There are some embryonic developments in the quest to increase the light-gathering capabilities available to Canadian astronomers. One which is potentially promising is an interest by the ‘Group of Seven’ countries of the Economic Summit (Canada, U.S.A., U.K., F.R.G., France, Italy and Japan) to co-operate on the development of a large multinational scientific facility. This could, for example, be a new generation optical observatory, possibly even a pair of 8-m class telescopes. Not all member countries have a strong interest in this particular proposal, since some have other priorities, but if the U.S. and Britain were to endorse such a project, Canadian support might provide sufficient impetus to bring it to fruition.

Chris Aikman
Secretary

The next CASCA annual meeting will take place at the Université de Montréal next June. Note that Tuesday is reserved to invited discourses and papers related to the CFHT. This special day is to commemorate the 10th anniversary of the Canada-France-Hawaii Telescope. We hope to see most of you!

Serge Demers
President LOC

JUNE 1989

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CFHT USERS MEETING

G.G. Fahlman

The second CFHT users meeting is scheduled for May 10 to 12, 1989 at Observatoire de Paris-Meudon. An outline of the program (subject to minor changes) is as follows:

May 10:
- Science with the Second Generation Instruments
- (a.m.) Highlights of Recent Developments at CFHT
- (a.m.) Coudé Spectrograph
- (p.m.) Multi-Object/Subarcsecond Imaging Spectrograph

May 11:
- Instrumentation in Development: CFHT/National
  - (a.m.) High Spatial Resolution
  - (p.m.) IR Imaging and Spectroscopy

May 12:
- (a.m.) New Instruments: Astrophysical Needs
- (p.m.) Summary and Setting Priorities

All sessions include time for discussion. The sessions on May 10 will each include a presentation of the new instruments by their respective project managers. These will be followed by a number of invited talks describing the scientific potential of the new instruments. These talks are intended to emphasize the science rather than the hardware.

On May 11, the morning session will include talks describing site characteristics, image quality and what is being done to exploit the excellent seeing we enjoy on Mauna Kea. In the afternoon, the CFHT IR study group will present a report discussing national developments and possible future IR detectors at CFHT. This will be followed by invited presentations on adaptive optics, FTS spectroscopy and reviews of research areas which require certain IR capabilities.

The morning session on May 12 will provide an opportunity for people to present and discuss ideas for new CFHT instrumentation. There are some invited presentations planned now but it should be possible to schedule brief 'contributed' talks. If you are interested, please contact J.R. Roy (Laval) or your nearest SAC member as soon as possible. The other SAC members are G.G. Fahlman (UBC), D. Gray (UWO), and D. Crampton (DAO). J.R. Roy will be the SAC vice-president for 1989.

The afternoon session of May 12 is likely to be of ‘historic’ importance. Recall that the present development of ‘second generation’ instruments was based on the priorities established at the first CFHT users meeting in Montreal. It may be anticipated that the priorities arising from the Second Users meeting will also set the agenda for further instrumentation developments at CFHT. If this matters to you then you should consider attending. For further information, please contact me (e-mail: USERGRGF@UBCMTS.G.BITNET) or another SAC member.

Some financial assistance for a limited number of university attendees will be available from NRC through its Office of National Facilities. If your own funds will not cover all costs, please contact Dr. Bryan Andrew at NRC, Ottawa K1A0R6, telephone: (613) 993-6543, e-mail: DCM@NRCVM01.BITNET.

As a final note, CNRS, the French counterpart to NRC, is organizing a ceremonial gathering on the evening of May 12 to mark the 10th anniversary of the CFHT. All participants in the users meeting will be invited to attend.
JOINT SUBCOMMITTEE ON SPACE ASTRONOMY REPORT

JSSA and Priority Assessment: Individual JSSA members have been active since the Trent meeting, and the committee is planning a January meeting to discuss the wealth of issues and opportunities pending. The latter arise in large measure from the establishment by NRC’s Space Division (SD), in late Spring, 1988, of a funding envelope (approx. $4M/yr) during the 1990s for support of space astronomy facilities. Practice has been that these funds are used for space hardware development in industry, not as a granting agency. The latter point was, apparently, not made sufficiently clear by me at the Trent CASCA and ACA meetings.

Space Division (in their July, 1988 Newsletter) calls upon the scientific communities they serve to play a stronger role than heretofore in long range planning. They write: “We believe that the introduction of guideline budgets will allow the science teams to do longer term planning since the ramifications of recommendations to the Space Division are clearer. Participating scientists will have to bear a significant degree of responsibility for: 1. Recommending priorities within the subdiscipline. 2. Balancing cost per experiment against the frequency. 3. Resolving problems of the timing of opportunities. 4. Recommending how many and which opportunities to carry forward. 5. Developing and recommending commitments to international projects. 6. Considering true costs including manpower, ground-based and other support.”

SD indicated that they were relying on JSSA (the Joint Subcommittee on Space Astronomy) to provide priority guidance from the Canadian astronomical community. At their June, 1988 meetings, CASCA and ACA asked JSSA to propose a mechanism for the astronomical community to assign priorities to proposals submitted to SD.

In response, the Chairman has submitted a plan to all three sponsoring bodies. The key point of the proposal is that the primary JSSA role point is that of advocate (of the need for a space astronomy program) to priority assessment. JSSA would submit its recommendations simultaneously to SD, the relevant NRC committees, and to theCASCA Directors. Since all of those groups have ex-officio representation on JSSA, and JSSA membership will be even more interdisciplinary, the direct communication between JSSA and SD should facilitate quick and representative response from our community to SD. (It is also imperative that JSSA maintain close liaison with the other relevant CASCA/ACA subcommittees, particularly those on Radio Astronomy and on Optical and Infrared Astronomy.) At this time it appears that all points but details of membership appointment procedures have been approved by the sponsoring bodies, and resolution of that one will be on the agenda of our January meeting.

Status of Opportunities: Our community has given highest priority to Canada joining as minor (at the $20M level in a $200M program) partners in the ESA Lyman (far uv spectroscopy) or Quasat (space VLBI) missions; and in the Russian RadioAstron (space VLBI) mission (at a much lower level, <$4M). In October, ESA ranked Lyman and Quasat behind other missions, so they seem unlikely to proceed (technically, the final decisions have not been taken, indeed, in a strange twist of fate, depend upon the US Congress). The US Lyman (FUSE) mission has Canadian scientific participation (Hutchings), is being pursued vigorously in the USA, and could be a natural for Canadian support in the wake of the ESA decisions.

However, the USSR has invited Canada to participate in three major missions other than RadioAstron. A very encouraging and interesting interchange took place between nine Soviet scientists, including Drs. Kardashev, Sunyaev and Yatskiv, in Ottawa in November. The missions are Spectra X-γ (a large X-ray and far-UV telescope complex), Aelita (submillimetre observatory to study the cosmic background) and a 1.7-m aperture UV telescope. There is a February, 1989 deadline for joining Spectra X-γ, whose proposed launch date is 1993.

Furthermore, SD has recently been able to respond to JSSA’s Jan., 1987 request to examine their FOCUS carrier’s potential for simple space astronomy projects; the feasibility study now underway looks encouraging.

Finally, the Space Station project continues to gain momentum. An interim report of the Small Attached Payloads Working Group identifies a number of astronomy missions of potential interest to Canadians.

CASCA members are invited to submit ideas, comments or suggestions to JSSA at any time; for discussion at the next meeting, however, they should reach me no later than about January 19, 1989. Persons interested in serving on the JSSA should also let me know, as three persons, including me, will rotate off in June, 1989. I may be reached on bitnet as Hesser@NRCDAO or by FAX 604-388-0045.

James E. Hesser, Chairman

CANADA-FRANCE-HAWAII TELESCOPE

Associate Executive Director

Applications are invited for the position of Associate Executive Director of the Canada-France-Hawaii Telescope Corporation, which operates a 3.6-m optical/infrared telescope on the summit of Mauna Kea, Hawaii. Under the normal rotation of this post, it will be filled by a Canadian nominee for a three-year term beginning in mid-1990. Continued employment beyond the three-year period is possible. The appointment will be made by the CFHT Board on the basis of a selection process to be organized by the National Research Council of Canada.

The Associate Director will be an established researcher with some familiarity and administrative experience with astronomical telescopes and instrumentation. The appointee will work closely with the Executive Director to implement the policies of the Board, guide the operations of the facility and plan improvements. Ability to work at an altitude of 4200 m is essential. Knowledge of both English and French would be very useful.

The Associate Director also is expected to continue his/her research and to be a user of the telescope. The research facilities at the Waimea headquarters include an astronomical library and a computer network comprising a Sun 3/180, Sun 4/280, 7 Sun 3/60 workstations, and a microVAXII.

Letters of application must include a curriculum vitae, a list of publications, a statement of personal research interests including those particularly appropriate for the CFHT, and the names of three professional references.

Applications are due by 1989 March 1 and should be sent to

Dr. Bryan H. Andrew
Director, Office of National Facilities for Science
National Research Council
Ottawa, Ontario, Canada, K1A OR6
Telephone: (613) 993-6543

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THE UNIVERSITY OF WESTERN ONTARIO
Department of Astronomy

The Department of Astronomy, The University of Western Ontario, invites applications for a one-year appointment at the rank of Assistant Professor, with some possibility that a longer term appointment may become available. Candidates should have a Ph.D. in astronomy or a closely related field. Postdoctoral experience is desirable but not necessary. The successful candidate will be active in research and participate in the teaching program. The appointment is subject to budgetary approval. Applications, including a current curriculum vitae and the names of three references, should be sent by March 15, 1989 to Professor W. H. Wehlau, Head, Astronomy Department, The University of Western Ontario, London, Ontario N6A 5K7. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian Citizens and Permanent Residents of Canada.

POST-DOCTORAL FELLOWSHIPS AT THE UNIVERSITY OF TORONTO

Positions are open for two Post-doctoral Fellows in the Department of Astronomy, University of Toronto. Both positions have a term of two years, beginning in the fall, 1989. There is some flexibility in the starting date. Applicants should be interested in the observational and/or theoretical aspects of one or more of the following fields of research:

(1) Observational Cosmology - with emphasis on faint galaxies and galaxy clustering.
(2) Variable Stars - with emphasis on either early-type stars or late-type giants or supergiants, including Cepheids, Miras, and related stars.
(3) Radio Astrophysics - with emphasis on either mm-wave studies of active galaxies or radio emission from stars.

The Department of Astronomy has a faculty of 19 astronomers and 25 graduate students. In addition, the University is host to the Canadian Institute for Theoretical Astrophysics, a national facility for the support of theoretical astrophysics.

Department of Astronomy faculty involved in the sponsorship of these fellowships representing the fields listed are R.G. Carter and H.K.C. Yee (Cosmology); J.R. Percy, C.T. Bolton, and J.D. Fernie (Stars); and E.R. Seaquist (Radio Astrophysics). Applications are required to arrange for the transmission of three letters of reference to accompany their application. The deadline for applications and letters of reference is February 3, 1989. Applications plus letters of reference are to be addressed to:

Dr. E.R. Seaquist
Chairman
Department of Astronomy
University of Toronto
60 St. George Street
Toronto, Ontario
M5S 1A1 Canada

ROSAT

The planned launch of ROSAT (Röntgensatellit) is in February 1990 as a joint project of West Germany, the UK and the USA. It will carry the German soft X-ray telescope (XRT) operating in the 0.1-2 keV (60-600 Å) band, and the UK Wide Field Camera (WFC) operating in the XUV band 0.02-0.2 keV (60-600 Å). It will be launched by a Thor Delta-II into a 575 km (96 minute) orbit with a 57 degree inclination where it is expected to last between 3 and 6 years. After an initial eight week turn-on and check-out period there will be a six month all-sky survey in one of the few bands of the electro-magnetic spectrum which remain unexplored (60 to 250 Å). It will then be devoted to pointed observations for the remainder of the mission. The satellite will be operated from the German Satellite Operations Center near Munich with overall scientific control provided by the ROSAT Scientific Data Center at the MPI (Max Planck Institute fur Physik und Astrophysik, Institute fur Extraterrestrische Physik) in Garching.

The characteristics of the co-aligned, imaging telescopes and their detectors are given below. The XRT is a Wolter type I design with a set of four nested, grazing incidence mirrors. Three imaging detectors are available: two position sensitive proportional counters (PSPC) and one high resolution imager (HRI). The HRI which will be supplied by NASA is almost identical to that on Einstein and has no energy resolution. Only the PSPCs will be used during the survey mode. The band pass of the XRT overlaps those of both the EXOSAT CMA (channel multiplier array) and the Einstein IPC (imaging proportional counter). Compared to the latter, XRT will be between two and five times more sensitive at three times higher angular resolution, and have twice the energy resolution. The WFC has three nested, grazing incidence Wolter-Schwarzschild type I mirrors with a XUV-sensitised microchannel plate detector. The scientifically chosen pass bands are defined by six filters. The peak effective area of the WFC is about four times that of the EXOSAT CMA.

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<tr>
<td>field of view</td>
<td>PSPC: 2 deg</td>
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<tr>
<td>energy range</td>
<td>0.1 - 2 keV</td>
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<tr>
<td>peak effective area</td>
<td>0.25 keV: 360 cm²</td>
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<tr>
<td>energy resolution</td>
<td>1 keV: 43%</td>
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<tr>
<td>angular resolution</td>
<td>PSPC: 30 arcsec</td>
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<td>(fwhm) on axis</td>
<td>HRI: 2 arcsec</td>
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During the pointed phase of the mission all observing time will be assigned solely on the basis of merit with the division of time between the partners being: W. Germany (38%), UK (12%), USA (50%). Each country will issue its first AO (announcement of opportunity) 12 months before launch in 1989 February with the application deadline three months later in 1989 May. In principle, Canadian astronomers could apply to one (but only one) of the three agencies in response to the AO just as they did for IUE. However, as I understand it, W. Germany can afford to give very little time to outside proposals unless they are in cooperation with a W. German group. NASA, the most likely choice for interested Canadians, will distribute its AO more widely than just the USA and will not give preference to joint proposals.

About 40% of the detected X-ray sources are expected to be optically bright stars, and for spectroscopy they should be within range of intermediate sized ground based telescopes such as those at the DAO, DDO and Mt. Megantic. Although less than 5% of the ROSAT observations will be assigned to absolute or restricted times, the observing schedule for pointed observations will be freely available some 2 to 8 months in advance with sufficient
accuracy to allow nearly simultaneous monitoring from the ground. Probably only for flaring or micro-flaring sources are coincident observations critical. Updates to the schedule will be available from MPE. The schedule will also give the opportunity of getting together with the Principal Investigator. X-ray data for pointed (but not the survey) programs will be made generally available from the data bank one year after they have been delivered fully calibrated to the Principal Investigator. A significant percentage of sources is expected to be extragalactic (e.g. AGNs), these would be optically fainter and more appropriate to large telescopes. In this case, because simultaneous observations are generally less important, they could still be accommodated in large telescope scheduling.

Gordon Walker, MPE, Garching
1988 November

FREE-TRADE AND LARGE TELESCOPES

Sidney van den Bergh
As a result of GATT we presently live in a world in which trade is freer than it has ever before been in human history. It now appears quite likely that this free-trading environment will soon break up into three major trading blocs consisting of Europe, the U.S. + Canada, and Japan. This evolution is, in some ways, analogous to the situation in regard to access to large telescopes. At present Canadian astronomers making observing proposals of high merit have relatively free access to CFHT, and the KPNO and CTIO 4-m telescopes, and in a more limited way, to the Palomar 5-m Hale telescope.

It now appears that this very favorable situation will change radically after the next generation of really large telescopes sees first light. All of the major large-telescope projects that are presently funded (or almost funded) are being built by groups that will only give members of these consortia access to their telescopes. Examples are the 10-m Keck (Caltech + UCaI), the 2x8-m Columbus telescope (Arizona et al.), the 8-m Magellan telescope (Carnegie Institution et al.), the 4x8-m ESO telescope (Europe), and the 7.5-m JNT (Japan).

The most difficult (and some would say the most exciting) problems in astronomy generally have to be solved with the largest telescopes. If Canada wants to participate in future research on this astronomical frontier it will also have to participate in a consortium that will build a really large telescope to which our astronomers will have reasonably free access.

For astronomical research to prosper we need access to a spectrum of telescopes with sizes ranging from about 1 m to 10 m. At the present time the lower end of this range is covered by various university telescopes, the instruments at DAO, and Canada's share in the 3.6-m CFH telescope. Participation in a really large telescope project would give Canadian astronomers a well-balanced astronomical arsenal to attack the problems of the 21st century.

TELESCOPES LARGE AND SMALL

In recent years, members of the Canadian astronomical community have developed several proposals for new, large-aperture telescopes which, it is claimed, will "satisfy the observing needs of Canadian astronomers", "keep Canada at the forefront of astronomy", and "carry Canadian astronomy into the 21st century". These proposals have appeared at a time when science in general has not received strong government support either in principle or, in large part because of massive government debt, in practice. For the foreseeable future, we anticipate increasing competition between scientific disciplines for very limited research funds. The purpose of this note is to address the effects of competition within our discipline for those funds.

The undersigned have independently come to the conclusion that, given the circumstances within Canada, the price that may have to be paid to build a large-aperture, multi-million dollar telescope is the closing down of one, or more, currently operating facilities. That would be too high a price. At one time, each of us felt that he was the 'odd man out' in holding this opinion, or at best was a member of a very small minority. However, statements made at the CASCA Annual Meeting in May, 1988, private correspondence and conversations, and published notes and comments suggest that ours is a widely held point-of-view.

The belief held by many Canadian astronomers that we must not allow smaller instruments to be sacrificed in favour of larger instruments is shared with a majority of our colleagues in the United States. The crisis in funding of astronomy in the U.S.A. and, in particular, the budget crisis at NOAO resulted in letters being sent to several hundred astronomers requesting advice and direction. On the basis of more than 100 responses which were received from the U.S.A. and other countries, it was concluded that "... an overwhelming majority ... advocated operating NOAO’s present facilities over shutting them down in favor of building 8-meter to 10-meter class telescopes ...".

It is obvious to everyone that there are research projects which require a large aperture. In such cases the 'need' is a necessity rather than a want. It should be equally obvious that there are projects which can only be pursued with a small or intermediate-aperture telescope. There are still more projects which can be carried out on large telescopes but which would be most efficiently pursued on a smaller instrument. The special values and advantages of smaller telescopes are many, but we list only a few:

(1) Small telescopes are essential for the training of graduate students;
(2) Given the nature of the work done with them, smaller telescopes often do not require particularly good sites and can, therefore, be placed close to the home institution. This factor facilitates their use in accumulating extensive, homogeneous series of observations, reduces operating costs, cases the difficulties associated with integrating new instrumentation, etc.;
(3) Flexibility in scheduling of a small telescope allows one to respond quickly when unexpected astronomical events occur;
(4) The lower operating costs and greater flexibility in scheduling smaller telescopes makes them suitable for long term projects to monitor, for example, stellar variability associated with magnetic cycles, pulsation, rotation, mass loss, mass exchange, galactic and QSO variability;
(5) At lower cost, a smaller telescope can be made competitive with a larger, costlier telescope by a suitable choice of optimized instrumentation;
of time on the existing, smaller telescopes. The quantity and quality of the science is not
determined by the size of the telescope.

Only a wide range of telescope apertures can satisfy the real observing needs of all
Canadian astronomers. Our goal should be to maintain that range of available apertures,
and to extend it at the large-aperture end only when there is no risk of breaking it in the
middle or at the opposite end.

This statement is supported by the following (listed in alphabetical order):

A.H. Batten   D.R. Bochonko
C.T. Bolton   J.D. Fernie
M.P. FitzGerald   D.F. Gray
A.F. Gulliver   G. Hill
D.P. Hube   E.F. Milone
M. Pedrosa   J.R. Percy
B.C. Reed   J.B. Rice
C.D. Scarfe   J.B. Tatmon
D.G. Turner   G.A. Welch
P.S. Wesson

Editor's note: Members' comments on the above and on the preceding article by Sidney
van den Bergh are invited for the next issue.

Colin Scarfe

AN INTER-UNIVERSITY TELESCOPE PROJECT

The Universities of Toronto, Montreal and British Columbia are planning to build and
to manage a 3.5-m telescope with the specific goal to carry out surveys and synoptic re-
search projects which require large amount of observing time. The technical specifications
of the observatory aim, as a first priority, to achieve the highest image quality that a
ground-based telescope of that aperture can produce. Instruments will be few in number
and will include a stellar spectograph (R = 50 000), a wide-field camera (CCD mosaic)
and a high resolution (adaptive optics) camera for work in the visible and in the infrared.

Observing time will be available to those astronomers from other institutions whose
research projects can benefit from the telescope and the instruments available.

For more information, contact Ernie Seaquist.

PROJET DE TÉLÉSCOPE INTER-UNIVERSITAIRE

Les universités de Toronto, de Montréal et de Colombie Britannique se proposent
de construire et de gérer un télescope de 3.5-m d’ouverture dans le but spécifique de
permettre des recherches synoptiques demandant de larges blocs de temps d’observation.
La conception technique de l’observatoire accorde la première priorité à l’obtention de
la meilleure qualité d’image possible au sol avec un télescope de cette taille. Le parc
télescope restreint comprendra un spectrographe stellaire (R = 50 000), une camera
grand champ (mosaïque de CCDs) et une camera haute resolution (optique adaptative)
pour le visible et l’infrarouge.

Le temps d’observation sera accessible aux astronomes d’autres institutions dont les
projets de recherche seraient bien adaptés au télescope et à ses instruments.

Pour plus d’information contacter Ernie Seaquist.
COOPERATIVE OBSERVATIONS OF X-RAY BINARIES
AND ACTIVE GALAXY NUCLEI

D.C. Morton

In July 1989 the USSR will launch its GRANAT spacecraft carrying several x-ray telescopes for imaging, spectroscopy, and timing in the wide spectral range from 3 keV to 1 MeV. The orbit will have a period of 4d and an apogee at 200,000 km.

Soviet astronomers are interested in collaborative projects that would obtain continuous ground-based monitoring of certain x-ray binaries and active galaxy nuclei during the GRANAT observing. These sessions typically will be scheduled for 24 hours on a single target.

Canadian astronomers who are interested in participating through ground-based photometry or spectroscopy should contact R.A. Sunyaev of the USSR Space Research Institute, Telex 411 498A STAR SU to obtain details of the GRANAT targets and schedules.

The GRANAT spacecraft with 2.3 tons of scientific payload. In the centre is the French coded-mask X-ray telescope SIGMA and on the left side are 4 units of the ART-P coded-mask X-ray telescope. On the right side are 4 units of the ART-S high-pressure Xe counters for timing and spectroscopy, and a slewing platform with the X-ray telescope SUNFLOWER and an optical CCD imager. The spacecraft also carries the Danish all-sky monitor WATCH with 4 detectors, the Soviet gamma-burst experiment KONUS with 7 detectors, and 6 French gamma-burst detectors.
CFHT CTAC/SAC/TAC

G.G. Fahlman

The alphabet soup in the title contains the acronyms of the three committees through which our community interacts with the CFHT. They each have distinct roles but these tend to be blurred because of common membership. My aim in this article is to attempt to dispel some of the mystery associated with the operation and relationships among these committees. What do they do?

Prior to 1988, the functions of CTAC (the Canadian Time Allocation Committee) and SAC (the Scientific Advisory Council) were performed by the same four individuals. In June 1987, the NRC Associate Committee on Astronomy (ACA) recommended that a separate CTAC be constituted to begin work in 1988. This committee has now assessed proposals for two semesters and, in an administrative sense at least, appears to be working reasonably well.

The CTAC consists of 6 astronomers, 4 ‘independents’ and 2 ‘SACs’, each of whom have equal status for assessing proposals. The four non-SAC members are selected from nominations proposed by the CASCA/ACA Subcommittee on Optical and Infrared Astronomy (SOIRA). They are appointed for a term of three years by the Director of HIA, whose office handles the administrative functions and pays the operating expenses of CTAC. The two SAC members of CTAC also represent Canada in the CFHT TAC. The reason for including these members is because some compromises are inevitably necessary when scheduling the telescope and therefore it is important that the SAC members be fully aware of the context and comments associated with each proposal. The SAC members serve on the CTAC/TAC for two years.

The 1988 membership of CTAC is P. Hickson, G. Mitchell, P. Stetson, F. Wesemael, D. Gray (SAC), and G. Fahlman (Chairman, SAC). In 1989, D. Gray will be replaced by D. Crampton and F. Wesemael by R. Henriksen.

The evaluation procedure used by CTAC can be outlined as follows:

1) All submitted proposals are distributed to each CTAC member shortly after the semester deadline. The chairman, in consultation, assigns each proposal to a specific CTAC member who is expected to act as a referee and spokesman at the CTAC meeting. About this time, the chairman solicits the names of suitable external referees. Generally, two referees are chosen for each proposal although more or less may be used as circumstances dictate. The proposals are distributed to the referees by the HIA.

2) The referees’ reports are distributed to the CTAC members as they are received. In some cases, the applicants may be directly contacted if specific issues are raised which, in the judgement of the CTAC supervisor, warrant clarification.

3) A week or so before the SAC/TAC meeting, the CTAC meets for two days. At this meeting each proposal is presented in turn by its CTAC supervisor who reviews the main goals of the program, the content and recommendations of the external referees and offers his own comments. Any technical comments provided by the CFHT staff are introduced here. A general discussion takes place before going on to the next proposal.

4) After all the proposals have been presented and discussed, the CTAC members are polled for the numerical grade, 1-4, they wish to assign to each proposal. Abstentions are allowed. A mean is calculated. Not surprisingly, there is usually very little variation among the grades assigned to any given proposal. Those that do show a significant dispersion are flagged for rediscussion. Note that the grade is determined solely by the CTAC; the external referees’ reports are an important consideration and often very influential but the final assessment is exclusively CTAC’s responsibility.

5) Once the proposals have been graded, they are split into ‘dark’ and ‘unrestricted’ time categories and ranked. This ranking is the major factor in determining whether or not a proposal will receive time on the telescope. Each semester, Canada has about 65 nights to assign. The TAC members can usually schedule the top 15 or so proposals, accounting for 80-90% of the time. For the remaining nights, the proposal rankings are subject to some perturbation depending on the dark/bright demand, instrument configurations and French/Hawaiian requests. Consequently, it is possible for a scheduled proposal to have received a lower grade than one which is not scheduled.

6) Finally, the CTAC members must write a brief summary of the results of the assessment which is returned to the P.I. on the proposal together with the external referee reports.

The above procedure is designed to achieve a decision which, as far as possible, is consistently fair to all applicants and favours scientific merit over all other considerations. That is, CTAC does not explicitly consider issues such as the balance among research fields, or such typical Canadiana as the regional, institutional and individual balance among the observers. It does not retain a formal memory of who was successful or unsuccessful in previous semesters. CTAC does not distinguish between Canadian and non-Canadian proposals in its ranking.

Of course we recognize that the notion of quantifying the merit of a proposal is quite questionable. The grade is purely a device to rank the set in the face of considerable diversity. The telescope is oversubscribed by a factor of about 2.8 and therefore the majority of proposals will be rejected even though many of these are very highly regarded.

CTAC expects that all proposals will be submitted on the current CFHT forms (or TeX facsimile) and that all the information requested on the form will be supplied. There is a two page limit for the scientific justification which, in the future, will be enforced. One extra page for figures and similar supplemental material will be allowed. Tiny type is a no-no. Preprints, reprints and the like will not be accepted. The point of this rule is to ensure that all proposals compete equally for the time and attention of the committee members. The cooperation of those who prepare the proposals is deeply appreciated.

The role of the SAC is defined in the Tripartite Agreement - it is to provide advice to the Board of Directors on scientific matters. Practically, the SAC addresses most of its advice to the CFHT Corporation. The SAC consists of 4 Canadian, 4 French and 2 Hawaiian astronomers, who each serve a 4 year term. The offices of president and vice-president rotate on a two year cycle between French and Canadian members. Historically, the primary role of SAC has been to define the instrumentation complement of CFHT but it also provides advice on a wide range of issues relevant to the performance and operation of the telescope.

The Canadian members of SAC are D. Crampton, D. Gray, J.R. Roy and G. Fahlman (vice-president). In 1989, J.R. Roy will assume the office of vice-president. The SAC members are formally appointed by the president of NRC (the signatory agency of the Tripartite Agreement) who receives recommendations from the HIA Director. He, in turn, relies on SOIRA to provide suitable names.

SAC meets twice a year with the Spring meeting alternating between Canada and France and the Fall meeting held at CFHT headquarters. The outcome of these meetings is a report (SAC Minutes) containing a suite of recommendations (for action) and resolutions (expressing an opinion) which are personally presented to the Board by the two SAC executive members. (The Board meets approximately 5 weeks after SAC.)

The CFHT TAC consists of 5 members, 2C+2F+1H, who serve a two year term. They are chosen from among the current SAC members. This group meets either immediately
before or immediately after the SAC meeting and is the body responsible for recommending the semester scheduling of the telescope. Currently, TAC does not become involved at all with proposal evaluations but simply attempts to reconcile the time requests from the three communities with the realities of the calendar. In this system, the time allocation is balanced each semester in the proportions dictated by the Tripartite Agreement. In addition, the Corporation must schedule engineering time (about 20 nights/semester) and the Director’s discretionary time (10 nights/semester).

At the last SAC meeting, Jacqueline Bergeron (the SAC president) proposed that the French and Canadian national TAC’s exchange applications with the idea that we would assign one Canadian referee to each French proposal and vice-versa. The purpose of this exchange is to provide a greater awareness of the scientific interests in our two communities and to encourage collaborative research. The national TAC’s would retain their independent roles in the evaluation and priority ranking of their respective proposals. Collaborative proposals have appeared in the past and the standard practise would assign one Canadian referee to each French proposal and vice-versa. The purpose of this exchange is to provide a greater awareness of the scientific interests in our two communities and to encourage collaborative research. The national TAC’s would retain their independent roles in the evaluation and priority ranking of their respective proposals.

My own feelings on this matter are mixed. The benefits are mostly intangible - the potential to use the telescope more efficiently and to enhance the scientific returns. The costs are, unfortunately, much more concrete. Typically, CTAC receives about 50 proposals per semester with about 25 The French receive about 60 proposals per semester (all internal) and they typically cover an even broader range of interests than the Canadian proposals. Many involve “visitor” instruments; a situation quite unlike the Canadian proposals. The immediate practical problem would be to find referees for the French proposals. CTAC often goes outside the country for its external referees simply because the diversity of interests within our community leads to very small pools of expertise in any particular field. It would not be possible to do this with the French proposals. CTAC itself could pick up part of the load but a good deal of extra work would clearly fall upon the present CFHT user community. Feedback on this issue would be very welcome.

THE PLASKETT MEDAL

The Royal Astronomical Society of Canada and the Canadian Astronomical Society have established an award entitled The Plaskett Medal, in recognition of the pivotal role played by John Stanley Plaskett in the establishment of astrophysical research in Canada. The award, consisting of a gold medal, is to be made annually to the graduate from a Canadian university who is judged to have submitted the most outstanding Doctoral Thesis in astronomy or astrophysics in the preceding two calendar years.

Candidates should be nominated by the deans of astronomy/physics departments from among the graduates of their respective universities. The department head should submit a letter of recommendation and four copies of the nominee’s thesis to the Awards Committee*, prior to 15 January 1989, for consideration for the 1989 award.

Note that the phrase “in the two preceding calendar years” in the eligibility rules makes it possible to nominate a candidate for whom a unsuccessful nomination was made in the preceding year. Because none of the documentation of previous nominations is retained for the use of the current selection committee, all nominations should be forwarded with full documentation.

* P.G. Martin, Chairman
CASCA Awards Committee
c/o CITA, University of Toronto
Mclennan Physical Laboratories
60 St. George St.
Toronto, Ontario M5S 1A1

UNIVERSITY OF WESTERN ONTARIO
Department of Astronomy

There have been several changes in personnel in the Astronomy Department recently.

Dr. Terrence Gaetz was awarded a postdoctoral fellowship by the Canadian Institute for Theoretical Astrophysics, which he will hold here at UWO.

Dr. Jaymie Matthews, who completed his Ph.D. here last year, received an NSERC Postdoctoral Fellowship, which he will hold in the Astronomy and Geophysics Department, University of British Columbia. He also received an honorary Killam Fellowship there.

Dr. Clifford Toner completed his Ph.D. this spring. The title of his doctoral dissertation was “The Time Variability of Spectral Line Asymmetries and Equivalent Widths for the G8 Dwarf Xi Boo A: Evidence for a Starpatch”. He has accepted a position with the Institute for Astronomy, University of Hawaii.

David Bohlender completed all requirements for the Ph.D. degree in July. The title of his dissertation was “Abundance and Magnetic Field Geometries of the Helium-Strong Stars”.

Four students completed all the requirements for the M.Sc. degree. Their names and the titles of their theses are as follows:

Yuan Cheng: “The Macroturbulence on the High Temperature Side of the Late-Type-Star Region of the H-R Diagram”.

Thomas Nagel: “Search for a Granulation Boundary in the HR Diagram”.

Brian Venturdo: “Applications of Temperature-Scaled White Dwarf Atmospheres”.

Robin Manley: “Smoothed Particle Hydrodynamics in the Schwarzschild Metric”.

Dr. Paul Barker, who was a Research Associate in the Department, accepted a position at York University.

At the spring convocation, three students graduated in Honors Astronomy: Patrick Coté, Edward Kennelly, and Aaron Sigut. Aaron Sigut was awarded the Maude Holt Kingston gold medal. He received a NSERC postgraduate scholarship and will continue his studies in astronomy at the University of Toronto. Edward Kennelly received a NSERC postgraduate scholarship and will start graduate studies in astronomy at the University of British Columbia. Patrick Coté is continuing his studies in astronomy as a graduate student at McMaster University.

Dr. J. M. Marlborough returned from sabbatical leave in Utrecht, the Netherlands.

Dr. David Gray will be on sabbatical leave during the academic year 1988 - 89. At the IAU meeting in Baltimore, he was elected president of Commission 36, Theory of Stellar Atmospheres. His book, “Lectures on Spectral-Line Analysis: F, G, and K Stars” is now available from The Publisher, Box 141, Arva, Ontario NOM 1C0.

Dr. John Landstreet completed the year as Faculty of Science Distinguished Research Professor, and returned to the normal teaching program.

Dr. John Rice spent the academic year 1987 - 88 in the Astronomy Department on sabbatical leave. He has now returned to Brandon University.

Work on the Reticon detector system for the Cassegrain spectrograph continued. A 4096 chip is being used in order to cover a large range in wavelength. Current plans call for testing during the winter and normal operation for observing to start in the spring.

W.H. Wehlau
THE B.C. "SCIENTISTS IN THE SCHOOLS" PROGRAM
Bruce Campbell

To help promote awareness of science and technology, and to encourage students to pursue careers in related fields, the B.C. Ministry of Advanced Education and Job Training has initiated a program to send scientists into classrooms throughout B.C. This program will operate initially at two grade levels - four to seven and ten to twelve.

A scientist visiting a classroom not only imparts enthusiasm for science, but also provides a role model. Such visits are particularly effective at the elementary level, as research shows that many students, especially girls, become indifferent to science and math by about grade eight. At the secondary level exposure to a visiting scientist further encourages those students potentially interested in careers related to science and technology. As well, such visits help make high school students aware of the important roles that science and technology play in society and in the economy.

Scientists and technologists from universities, colleges, industries and government laboratories around the province are being asked to participate in the program. The focus in this school year will be on regions with little exposure to activities in science and technology. To encourage volunteers to visit schools away from the Vancouver and Victoria areas, the Ministry will provide travel funds for participating scientists.

Visitors are encouraged to provide hands-on activities or demonstrations whenever these are appropriate to the topic. They will be provided with follow-up materials to leave with teachers and counsellors on the general importance of science and technology in society, and on career paths and options. The program is intended to complement existing outreach activities in the province, such as the Science World roadshows.

Volunteers will be matched by the Ministry with requests from school districts for visiting scientists. A district coordinator will then contact the scientist directly to arrange a mutually satisfactory timetable for the visit. At this point the coordinator will brief the scientist on the science programs of the classes to be visited, and will obtain details of the presentation to pass on to all the teachers involved. This will give the teachers the opportunity to introduce the subject area of the presentation to their classes before the visit.

Scientists and technologists interested in participating in this program should contact the Program Officer at (604) 387-5028, or write to:

"Scientists in the Schools"
Ministry of Advanced Education and Job Training
838 Fort Street
Victoria, B.C., V8V 1X4.

Editor's note: Bruce Campbell has recently taken up a position as Scientific Consultant to the above-named Ministry. This article is a shortened version of one prepared by him for other purposes, of which he provided me with a copy with permission to edit.

Colin Scarfe

Scientific conferences can be informative (almost always), stimulating (usually), and frustrating (frequently, thanks to concurrent sessions and overwhelming numbers of attendees). The meeting reviewed here was both the first two, but not the third.

The colloquium was held at the University of Victoria's Dunsmuir Lodge, formerly a treatment centre for wealthy alcoholics and, as one wag suggested, therefore entirely suitable for a gathering of 'algoholics'. The attendees, numbering 80, or so, ranged from beginning graduate students to many of the luminaries and current masters. The former, in particular, were afforded the opportunity to meet with the latter more often and for longer intervals than is normally the case at conferences. Both groups, no doubt, benefited.

The colloquium provided an opportunity to honour Frank Bradshaw Wood who has contributed so much to the subject. In addition to participating enthusiastically in all scientific sessions, Dr. Wood entertained participants one evening with a pre-dinner session of reminiscing about his many decades of study of binary stars.

Approximately 30 papers were presented orally, and a generous amount of time was allotted for discussion. In addition, there were approximately 45 poster papers. Papers and discussions addressed such problems as the defining characteristics of Algols - on which there was no unanimous agreement - and of other classes of binaries, evolutionary histories, observational and theoretical properties of disks, radio and polarization observations, the influence of magnetic fields, and methods for analyzing light curves. Many exciting results were presented.

Certainly, the first day of discussion regarding disks in Algol systems set the tone for the remainder of the conference. Primarily from an observational point of view, the questions of the fundamental nature of these disks and proper techniques for observing them were raised. As these disks are complicated structures with great uncertainty in basic parameters such as composition, temperature and density (Guinan, Peters, Polidan) it is not surprising that the observational results lead to a multiplicity of possible solutions. Key components to the observational analysis included period changes, line broadening, polarization, asymmetry in the eclipses and various degrees of scatter in different filters (Guinan, Kaeckuch, Koch, Olsen, Polidan).

Ed Guinan drove home this point with his discussion of β-Lyrae. After a brief review of its long observational history he revealed that its light curve varies in a cyclical fashion with a period of \( \pm 275 \pm 25 \) days. During this cycle the primary minimum changes in depth by \( \pm 0.28 \) magnitude while the secondary changes to a lesser extent. The levels of maxima also change during the cycle.

Discussion on the second day of the conference changed in focus to consider theoretical models for Algol systems. The first business of the day was a theoretical examination of Algol disks (Craw, Ruben). The various models proposed ranged from the "standard" classical mechanics formulation to complicated hydrostatic models. In all cases, proper description of the disk/stream viscosity was central to the problem.
A second theoretical question raised this day was in regards to the evolution of the constituent stars of an Algol system. Central to finding the proper model of evolution of the individual stars is the proper formulation of conservation of angular momentum laws for the whole system. Some models suggested a tidally induced mass transfer before the Roche lobe is filled i.e. before the onset of convective instability (Livio). Others suggested that strong stellar winds played a central role in mass transfer (Eggleton). In all cases, there was a desire to find agreement with observed geometries and time scales.

Bob Wilson presented an heroic double effort on day three. His first paper dealt with closely related W Serpentis systems; the second dealt with choosing a suitable computer code for solving Algol and Algol-like systems. In both cases, the emphasis was again placed on mass transfer rates as a competition between tidal damper and spin-up.

There was also some discussion regarding the statistics of Algols (Wilson, Budding) in terms of their spatial distribution, rotation rates, masses, etc.

The final discussion of the day centered about similar processes in chromospherically active stars (Hall). In particular, similarities to Algols in terms of rotation rates, emission lines, being x-ray and radio sources, possessing strong stellar winds and magnetic fields as well as undergoing period changes were emphasized.

The last day of the conference continued in the theme of modelling the evolution of Algols. Further complications to the models was suggested if the stars possessed strong magnetic fields (Bolton). In this case, mass transfer rates are affected by both the strength and geometry of the magnetic fields. Observationally, this will manifest itself by strong polarization of the disk light and period changes for the system.

Last, but not least, was the presentation of some of the exceptional poster-papers. First, an interesting observational paper by Mercedes Hall on the effects of magnetic fields on period changes, mass transfer and evolution of Algol binaries. Second, a paper by David Wonnacott for the modelling of disk formation - first as a simple ballistic model and then a more complicated viscous model. Third was the re-examination of the influence of stellar winds on the evolution of Algols by Chris Tout.

There was a general plea made by Rucinsky at the conference for standardization of solutions by using the Wilson-Devinney code.

Thanks go to Colin Scarfe, Chairman of the LOC, and to students, staff, and their families at the University of Victoria, and at the Dominion Astrophysical Observatory for the success of Colloquium 107.

David Lyder and Doug Hube
Department of Physics
University of Alberta
Edmonton, Alberta
Content, R.; et al. A search for optical flares and flashes with a liquid mirror telescope. U Laval. 28 Nov 88

Evans, Nancy Remage. The binary companion of the classical cepheid AW Per. DDO/U of T. 2 Nov 88

Fernie, J.D. Pulsational periodicities in R CrB. DDO/U of T. 14 Oct 88


Fernie, J.D. Uncertainties in period determinations. DDO/U of T. 14 Oct 88

Fernie, J.D.; Sasselov, D.D. The evolutionary state of UU Herculis stars. DDO/U of T. 14 Oct 88

Fernie, J.D. Delta Coronae Borealis in 1987. DDO/U of T. 21 Nov 88

Hrivnak, Bruce. Radial velocity studies and absolute parameters of contact binaries: I. Oo Aquilae. DAO. 5 Dec 88

Hutchings, J.; Neff, S.G. Tidal interactions and infrared-bright QSOs. DAO. 29-Sep-1988

Kormendy, J. Evidence for a central dark mass in NGC 4594 (the Sombrero galaxy). DAO. 29-Sep-1988

Kormendy, John; Westpfahl, David J. Noncircular gas velocities and the radial dependence of mass-to-light ratio in NGC 4594 (the Sombrero galaxy). DAO. 5 Dec 88

Kwok, Sun. An infrared sequence in the late stages of stellar evolution. U Calgary. 1 Dec 88

Landecker, T.L.; Pineault, S.; Routledge, D.; Vaneldik, J.F. The interaction of the supernova remnant VRO 42.05.01 with its HI environment. DRAO. 25-Oct-1988

Landstreet, J.D.; Barker, P.K.; Bohlender, D.A.; Jewison, M.S. The magnetic field and abundance distribution geometry of the peculiar A star HD 215441. UWO. 26 Oct 88

Mitalas, R. Efficiency of nuclear energy generation by hydrogen burning. UWO. 14 Nov 88


Ratnatunga, K.U.; Freeman, K.C. Field K giants in the galactic halo II improved abundance and kinematic parameters. DAO. 29-Sep-1988

Smith, Graeme H.; Bell, Roger A.; Hesser, James E. CN and CH variations among subgiants in the globular cluster 47 Tucanae. U Maryland. 28-Sep-1988

Stetson, P.B. Some factors affecting the accuracy of stellar photometry with CCDs. DAO. 29-Sep-1988

Taylor, A.R.; Gussie, G.T.; Goss, W.M. VLA observations of circumnebular neutral hydrogen in IC 418. U Calgary. 4 Nov 88

Van den Bergh, S. Light pollution, radio interference and space debris. A summary of IAU colloquium 112. DAO. 29-Sep-1988

Van den Bergh, S. Summary of Elizabeth and Frederick White research conference on Supernova 1987A. DAO. 29-Sep-1988

Van den Bergh, S. The distribution of novae and supernova remnants in the Large Magellanic Cloud. DAO. 29-Sep-1988


Volk, Kevin; Kwok, Sun. Evolution of proto-planetary nebulae. U Calgary. 1 Dec 88

Webster, Rachel L. et al. Detection of statistical gravitational lensing by foreground mass distributions. U of T/CITA. 24 Oct 88

B. OTHER PUBLICATIONS