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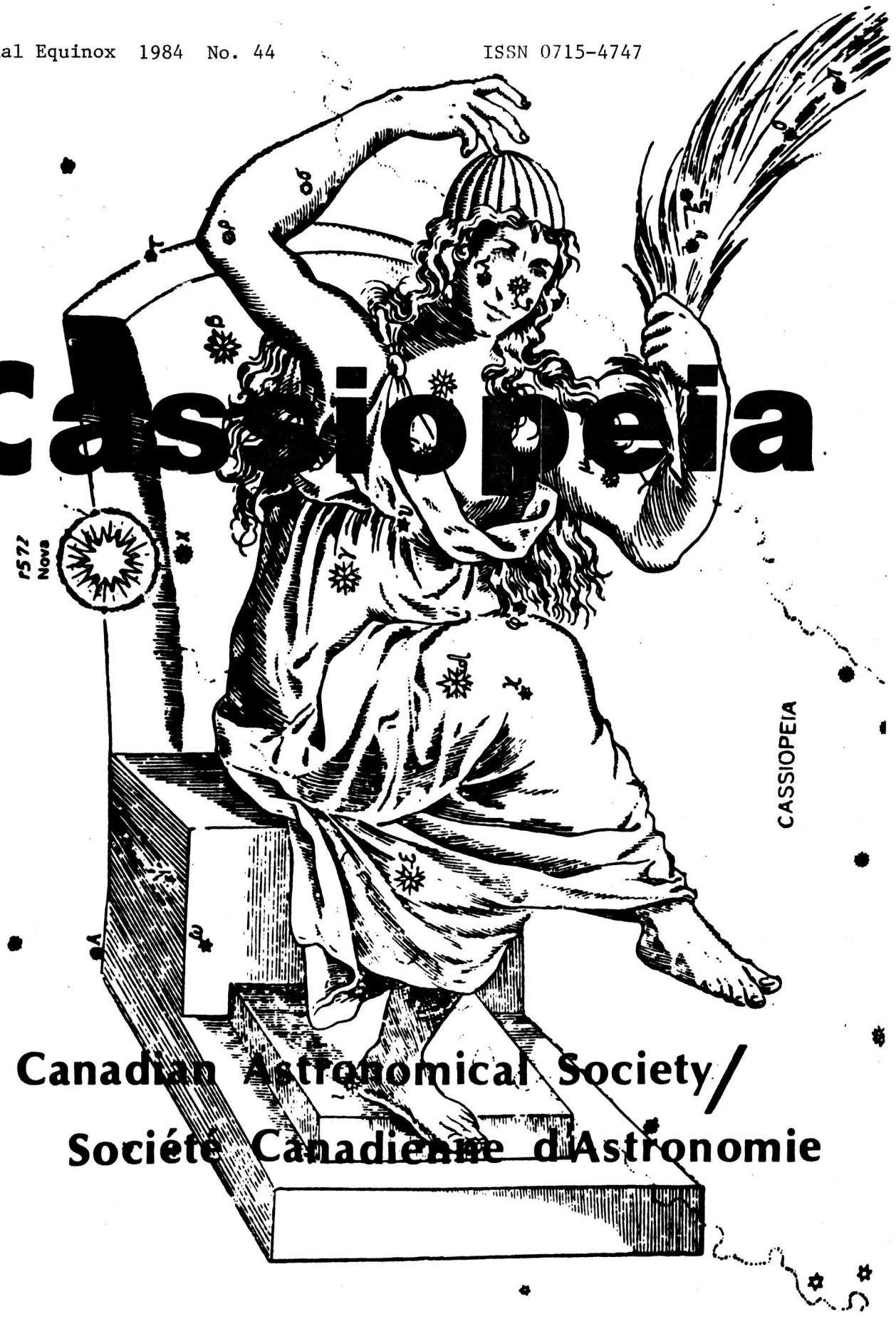
Cassiopeia



Canadian Astronomical Society/
Société Canadienne d'Astronomie

Cassiopeia

No. 44 Autumnal Equinox 1984

CANADIAN ASTRONOMICAL SOCIETY

SOCIÉTÉ CANADIENNE D'ASTRONOMIE

Editor: Colin Scarfe, University of Victoria

Editorial

Another summer has gone by, and with it the usual collection of meetings. This and another slim issue of Cassiopeia prompt me to reiterate my request to members attending topical meetings such as IAU Symposia and Colloquia to take the time to write a report for Cassiopeia, so as to make other members aware of the highlights, at least, of these meetings. The only such reports to appear in Cassiopeia since I last made this request, a year ago, were solicited by direct arm-twisting by me (luckily only a gentle turn was needed in each case!) or written by myself. I cannot possibly know whose arm to twist for each of the many meetings which would be of interest, so it would be appreciated if some reports were forthcoming unsolicited.

At the same time I asked for reports on activities at institutions. The response was zero, so it is clear that nobody has the least interest in these reports, and I shall make no further requests.

I should like to draw attention to Doug Hube's report on the Edmonton Space Sciences Centre. I had the opportuntiy to visit the Centre last month as a tourist, complete with camera, and was duly impressed with excellent displays in the foyers, and theaters which promise many a stimulating show. It's a place Edmonton can be proud of.

May I also point out Chris Pritchet's article on the new Small Grants Program and the application deadline contained therein.

Colin Scarfe

Deadlines

CFHT Chief Engineer Position	October 15
Small Grant Applications	November 30
Winter Solstice Issue	December 14

THE CASCA SMALL GRANTS PROGRAMME

CASCA is commencing a Small Grants Programme. Small Grants will be made available to both graduate (Ph.D.) students and professional astronomers who do not have access to other sources of funding. The rules and regulations are described below. Potential applicants should note that the deadline for receipt of these applications is November 30.

1. Eligibility Rules.

CASCA Small Grants are intended to cover the costs of Canadian astronomical research by applicants who do not have access to, and/or who are ineligible to apply for, continuing sources of research funding from other agencies. CASCA Small Grants are not intended for use by astronomers whose work could be funded by NSERC operating grants, or by budgetary allotments from the institution with which they are associated.

Applicants should hold a Ph.D. degree, or should be Ph.D. students who have completed the course requirements for their degree. Applicants should be working at least half-time in the field of astronomy and astrophysics. Applicants need not be Canadian citizens or members of CASCA, but the use of the grant should in some way advance Canadian astronomy. Normally this would imply either residence in Canada, or employment by a Canadian institution, or collaboration with a Canadian astronomer (provided that the purpose of the grant is to further this collaboration).

2. How to Apply.

For the first competition, applications should be sent to:

Dr. John MacLeod
Herzberg Institute of Astrophysics
National Research Council of Canada
Ottawa, ON
K1A OR6

Applications should reach the above address by November 30, 1984. For subsequent competitions, applications will be received twice a year; the deadlines for receipt of applications will be April 30 and October 31. Application rules and deadlines will be published in Cassiopeia. Decisions on grants will be announced after the December and June meetings of the CASCA Board of Directors.

There will be no prescribed application form. Applications for the CASCA Small Grants programme should contain the following information:

Title - brief and descriptive.
Abstract - a short, nontechnical summary of the research programme that is to be funded, and the purpose(s) for which CASCA funds will be used. (This will be published in Cassiopeia if the grant is approved.)
Justification - not to exceed 2 typed single-spaced pages. This part of the application should describe both the overall aim and the detailed execution of the project. The general importance of the project to astronomy should be stressed.
Budget - Detailed accounting of how CASCA funds will be used.
Statement of Financial Need - description of availability of other sources of funding, and the efforts that have been made to procure such funds.
Curriculum Vita - a summary of education and employment history, recent publications, grants, scholarships, and other information that would be of interest to the selection committee
Conclusion - a statement to the effect that the grant, if awarded by CASCA, will be used only for the requested purpose, and that an accounting will be furnished to CASCA within 2 months of the use of the funds, or within 6 months of their receipt. This statement should be signed and dated.

Finally, graduate students should submit a letter of support from their supervisor. This letter should include a statement explaining why the supervisor cannot fund the project for which the student is applying for funds from CASCA, and a statement that the student's course work is indeed completed.

3. Grant Selection.

Evaluation of grant applications and administration of grants will be the domain of a committee of CASCA. The Small Grants Committee will have three members appointed by CASCA, with the Treasurer of CASCA an ex officio member. The term for members of the committee will be 3 years. At least one member of the committee should be a member of the CASCA Board of Directors (for liaison purposes). In appointing committee members, CASCA Board of Directors will strive to achieve as reasonable as possible a balance among various disciplines in astronomy.

At the close of the application period (April 30 and October 31), committee members will circulate and evaluate applications. When necessary, the committee will seek external advice on applications. The criteria for judging applications will be scientific merit and financial need (in that order). After the committee has reached a concensus on the relative merits of the applications, they shall submit a recommendation for funding to the CASCA Board of Directors, who shall consider the request at the next semiannual Board of Directors meeting. The availability of funds for the programme will vary from year to year, and

is subject to the discretion of the Board of Directors. There is no implied commitment by CASCA to continue to fund the Small Grants Programme in perpetuity. Unsuccessful applications will not be reconsidered unless they are resubmitted.

4. Administration.

Allowable expenses for Small Grants are: travel (to astronomical institutions or conferences), conference fees, minor equipment, page charges, books, computing costs, and other reasonable expenses that are associated with astronomical research. CASCA Small Grants may not, however, be used to pay salaries or university tuition fees. If there is any doubt about the use of Grant funds, the grantee should obtain the approval of the Chairman of the Small Grants Committee before the expenditure takes place.

A full accounting (with all receipts) should be sent to the CASCA committee within 2 months of completion of the project for which the funds were intended, or within 6 months of receipt of the funds (which ever comes first). All unused funds are to be returned to CASCA.

At the conclusion of the grant, grantees should write a brief report of their activities for publication in Cassiopeia.

Canada · France · Hawaii Telescope Corporation
P. O. Box 1597 Kamuela, Hawaii 96743 USA

CFH

Société du Télescope Canada · France · Hawaii
Telephone (808) 885-7944 Telex 633147 CFHT

NOTICE OF VACANCY

C H I E F E N G I N E E R

Duties

The Chief Engineer has responsibility for all technical activities related to the scientific operation of the 3.6m telescope of the Corporation, whose staff includes 28 engineers and technicians assigned to the following teams: mechanical, data processing, electronics, optical, telescope control and site support. He establishes and manages the budgets for his areas of responsibility. He supervises preparations for astronomical observations, maintenance work and new development projects, with the constant aim of improving observing conditions and the performance of the telescope and its associated instrumentation. He will cooperate with institutes and observatories in Canada, France and the United States.

Professional qualifications

Candidates must have a university degree in Engineering, plus several years of work experience at a level of complexity and responsibility commensurate with that of the vacant position. They must have demonstrated capability in the realization and management of complex technical projects, in work organization and in the leadership of staff.

General qualifications

Candidates must speak and write English and French fluently. The individual selected will undergo a physical examination to determine aptitude to carry out duties at an altitude of 4200m. Candidates who are not citizens or permanent residents of the United States must satisfy all requirements for obtaining an appropriate visa.

Place of work

The main duty station is at the Corporation's headquarters in Waimea, on the island of Hawaii. The Chief Engineer will often work on the observatory site at the summit of Mauna Kea (4200m).

Remuneration

Remuneration will be established in consideration of experience and qualifications.

Applications, which must include a detailed résumé, a list of any publications and 3 professional references, will be received until 15 October 1984 by:

The Executive Director
Canada-France-Hawaii Telescope Corporation
P.O. Box 1597
Kamuela, Hawaii 96743
U.S.A.

Canada · France · Hawaii Telescope Corporation
P. O. Box 1597 Kamuela, Hawaii 96743 USA

CFH

Société du Télescope Canada · France · Hawaii
Telephone (808) 885-7944 Telex 633147 CFHT

VACANCE DE POSTE

I N G E N I E U R E N C H E F

Fonctions

L'ingénieur en chef est responsable de l'ensemble des activités techniques liées à l'exploitation astronomique du télescope de 3,6m géré par la Société, dont le personnel comprend 28 ingénieurs et techniciens répartis dans les groupes suivants: mécanique, informatique, électronique, optique, contrôle-commande du télescope, support au site. Il élabore et gère les budgets afférents à ses domaines des responsabilité. Il supervise la préparation des missions d'observation, les travaux d'entretien, le développement des projets techniques nouveaux, tout en ayant le souci constant d'améliorer les conditions d'observation et les performances du télescope et des instruments associés. Il est appelé à collaborer avec des instituts et observatoires situés au Canada, en France et aux Etats-Unis.

Qualifications professionnelles

Le candidat doit posséder un diplôme universitaire ou d'ingénieur, complété par plusieurs années d'expérience à un niveau de complexité et de responsabilité comparable à la position vacante. Il doit avoir démontré ses capacités dans la réalisation et la gestion de projets techniques complexes, l'organisation du travail et la conduite du personnel.

Qualifications générales

Le candidat doit parler et écrire couramment le français et l'anglais. La personne retenue devra subir un examen médical pour déterminer son aptitude à exercer ses fonctions à une altitude de 4200m. Les candidats qui ne sont pas citoyens ou résidents permanents des Etats-Unis doivent pouvoir satisfaire à toutes les conditions nécessaires à l'obtention du visa requis.

Lieu de travail

Le lieu de travail principal est au siège de la Société à Waimea, sur l'île d'Hawaii. L'ingénieur en chef est souvent appelé à travailler sur le site de l'observatoire, au sommet du Mauna Kea (4200m).

Rémunération

La rémunération sera fixée en fonction de l'expérience et des qualifications.

Les candidatures, qui doivent comprendre un curriculum vitae détaillé, les publications et 3 références professionnelles, seront reçues jusqu'au 15 octobre 1984 à l'adresse suivante:

M. le Directeur
Société du Télescope Canada-France-Hawaii
P.O. Box 1597
Kamuela, Hawaii 96743
U.S.A.

Edmonton Space Sciences Centre Opens

On July 1, 1984, the Edmonton Space Sciences Centre was declared officially open to the public by Helen S. Hogg.

More than 800 donors, contractors' representatives, government officials, and other special guests accepted invitations to a pre-opening reception and the formal opening day ceremonies. In addition to Dr. Hogg and municipal and provincial government representatives, the platform party included Lt. Col. Guy Gardner (NASA astronaut), Dr. Gary Lindberg and Dr. Dorian Smith. Dr. Lindberg represented the Canadian astronaut program and N.R.C.. Dr. Smith emphasized the link between the general public and science by presenting certificates, provided by N.R.C., to six finders of meteorites in western Canada. The keynote address was given by Dr. Hogg whose presence before, during and after the opening was a joy to everyone who met her or had the opportunity to hear her speak.

The formal history of the project goes back seven years to the day when John Hault, curator of the Queen Elizabeth Planetarium - Canada's first public planetarium, but by then its smallest - invited a small group of people to discuss the possibility of building a new facility devoted to public education in astronomy and related sciences. In fact, the project began to develop in John's mind at least four years earlier when he arrived in Edmonton and realized the inadequacies of the QEP.

Various stages in the development of this project have been described previously in these pages (No.28, 34, and 35). In its now more-or-less final form, the total cost of the facility is $17.6 million of which approximately $4 million was raised through the voluntary efforts of members of the Edmonton Space Sciences Foundation from the corporate, private and public sectors during the past three years. The largest donations came from Mrs. Margaret Zeidler to whom the planetarium theatre is dedicated, and from the Devonian Foundation after which the IMAX theatre is named.

The all new GP85 COSMORAMA projector from VEB Carl Zeiss Jena is, of course, the centrepiece of the ESSC and produces what is unquestionably the best planetarium sky in the World. It is the first traditional planetarium projector to be completely operable under computer control. It meets all, and exceeds many, of our specifications and represents the new standard in planetaria. GP85(#1) was assembled in the original Zeiss planetarium in Jena where it was tested and accepted by John Hault and Doug Hube in May. The projector was then dismantled, crated, shipped via Air Canada - occupying the entire commercial cargo space on a L1011 - and reached Edmonton the first week of June. The first planetarium show was presented at a pre-opening VIP reception on June 30th. In addition to the GP85, the planetarium theatre contains more than 200 35-mm Leitz projectors and special effects projectors.

Laser light shows are presented in the Margaret Zeidler Star Theatre in the evening following planetarium shows.

The Devonian IMAX Theatre was completed several months prior to the official opening. The film "Silent Sky" was shown on many occasions during that period, but "Hail Columbia" is now running as the feature presentation.

The bookstore/science shop, Nova Science Stage (for live demonstrations), and exhibit galleries are attracting and holding the attention of visitors. A significant component of the exhibit galleries is a 2-part exhibit donated by VEB Carl Zeiss. The first part is concerned with the history of the planetarium and includes several models of CZ planetarium projectors. The second and larger part is a superb collection of historical artifacts collected from various museums and observatories in the GDR. This collection includes the original Gregorian telescope, Fraunhofer and Dolland telescopes, a 1736 quadrant, Fraunhofer heliometer objective, and more. These items are generally on loan for 3 years after which they will replaced by other equally priceless and exquisite pieces. Elsewhere in the galleries are numerous hands-on exhibits (optics, magnetism, atomic structure), a lunar rock sample, a large electronic orrery, Canadian meteorite collection, model of the CFHT (courtesy of Dr. Jack Locke), full-scale model of the Canadarm (courtesy of SPAR Aerospace) reaching for a scale model of Solarmax, 3-D model of the Big Dipper, etc. Though it is not obvious to the visitor, the exhibit galleries are little more than half complete.

With the opening of the ESSC the work of the Foundation does not come to an end. Approximately $1 million is still to be raised, the exhibit galleries are not complete, and a major restaurant is only in the early stages of development. Most importantly, operation of the facility remains in the hands of the Foundation and its staff. (The ESSC is operated independently of the City administration, a situation which any group involved in a similar project should strive for.)

The potential success of the project is indicated by the near-capacity crowds during the first months, and by the fact that school shows (for which there is no admission fee) are booked into 1985.

The Centre is open 7 days a week, and is located in the northwest corner of the City at the corner of 111 Avenue and 142 Street. The 1985 G.A. of the R.A.S.C. will be held in Edmonton, an opportunity for many of you to respond to the invitation which appears on our T-shirts, pens and buttons, namely, "Discover ... the Edmonton Space Sciences Centre".

Doug Hube

IAU Colloquium 82

Claudio Sollazzo

University of Victoria

This colloquium, held at the Department of Astronomy/David Dunlap Observatory of the University of Toronto during the period May 28 to June 1, was dedicated to the topic of "Cepheids: Observation and Theory".

Cepheid variable stars and closely related objects (ranging from the classical Cepheids to W Vir, RR Lyr, δ Sct etc.) have long won recognition as being a very important class of stellar objects because of their peculiar nature as pulsators. The phenomenon of Cepheid pulsation is today fairly well understood; therefore, these stars (mostly, the classical Cepheids) are often extensively used as fundamental calibrating tools for the physical parameters of stellar objects (radii, temperature, luminosities and, more indirectly, masses). Moreover, their relevance in establishing a reliable distance scale is well known. Also our theoretical understanding of stellar structure and evolution owes a great deal to these objects; the impact of the large amount of observational knowledge of these stars on the predictions of the theory is almost unique.

An abundant literature on these arguments and questions has been published in the past several years and many meetings have had sessions dedicated to these problems. Nevertheless, there has been for a long time a need for a forum totally dedicated to Cepheids in which to discuss and compare new observational results and theoretical predictions, as well as establish new reference points and new directions to work through. The Toronto meeting has come as an answer to this need, and in the most complete and successful way both for the scientific sessions and for the social events.

During the four days of the meeting, there were essentially seven scientific sessions. Each one started with an invited review on some aspect of Cepheid studies and continued with a number of related contributed papers and discussions. A very much appreciated feature of the afternoon sessions was the use of the last part of them (about two hours) exclusively for posters which comprised 15 out of a total of about 30 contributed papers; this arrangement gave scope to this most efficient method of presenting papers to meetings, by leaving the participants time and opportunity to read them and get into useful discussions with the authors as well as with other colleagues as need and interest would require.

The scientific sessions started with a mainly observational review of the fundamental parameters of Cepheid variables by J.W. Pel, which put in clear focus the present knowledge (with strong emphasis on the observational uncertainties) of radii, temperatures, luminosities, etc. of these stars. Other observational reviews were on Cepheids as distance indicators (B.F. Madore), Cepheid variables in other galaxies (M.W. Feast) and (these last ones also covered some theoretical aspects) on double-mode (L.A. Balona) and Population II Cepheids (H.C. Harris).

The theoretical ones, on the evolution of Cepheid variables (S.A. Becker) and on the theory of their pulsation (J.P. Cox) added to the overall completeness of the description by pointing out the points of agreement (and disagreement)

with the observations (cepheid mass discrepancy, the question of helium-enriched envelopes, theoretical P-L and P-R relations for long-period cepheids, relations between the two coexisting groups of variable and non variable yellow supergiants, just to name a few.) Within this framework, the contributed papers (both oral and poster) had a primary role in bringing forward the latest results on the "Cepheid problem" and in generating ample debate among the observers and theoreticians.

One of the conclusions that could be reached during this meeting is that, now that new detector technologies have become established in astrophysics, more extensive use should be made of these devices and their related new techniques of data analysis. This would permit making observations of types which are still somewhat difficult to obtain. A special point concerns itself with the infrared observations of cepheid variables - we could conclude that it is in that part of the spectrum that most of the powerful developments in the observational knowledge will probably be found. And it goes without saying that these new findings will give the theorists new fuel to burn.

Also the problem (theoretical as well as observational) of the radii of classical Cepheids will benefit from the above mentioned developments (as will all the related questions of masses, luminosities, temperatures, etc.). The infrared is certainly the best place to look for information on radius variations (with no contribution from the temperature) and with the accurate measurements now possible, the results are very promising. But even from the visible, better radius determinations are possible, now that both theoretical and observational evidence is stressing the major role of a surface-brightness function which depends upon (at least) two parameters (temperature and gravity or two suitable colours).

To conclude, the conference has more than kept its promise as an exciting forum for new ideas and discussions on the problems of Cepheids, and for this the organizers (both people and institutions) should be warmly thanked. The proceedings (edited by B.F. Madore) will be published by the end of the year by Cambridge Univeristy Press. These will be a welcome tool for all who are interested in this field.

Reflections on Big Projects

For those who believed that the government funds big science projects because of their obvious virtue and benefit to the country, the open session on the Future of Canadian Space Astronomy at the CAS meeting last June was certainly a sobering experience. The comments of Ken Pulfer and David Low were new information to many attending the session, and caused much choking. However, the information they provided is invaluable, and Jim Hesser's summary in the Summer Solstice issue should be committed to memory by all those championing big projects, or who are thinking of doing so, be it Starlab, CLBA, or something yet to come.

Reflections on the experience spiral slowly in to confront a central question: why should the government provide funds for expensive instruments which scientists will use to pursue their own interests? We can all argue vigorously about the benefits of frontier science, but how convincingly? Are the strident voices of an injured scientific community to be distinguished from any other self-interested lobby group?

From a political point of view it is not necessary to fund science at all. It is my conviction that a government which saves money by not funding science is quite honestly reflecting the priorities of its electorate. If you do not share that conviction, then I dare you to conduct a street survey to establish the grass roots support for spending $80M on a radio telescope.

It remains, then, for the government to assume a leadership role in the area of nurturing science. What kind of leadership can we expect? For those who establish policy, what in their background will have affected their views on science? A couple of courses in high school? An economics course that touched upon the place of 'high-tech' in an advanced economy?

All that really remains is to lobby.

Perhaps not quite all. The problem with which we are faced has its roots deep in our society. The generally blank reaction to science is, in a negative way, part of the elusive Canadian culture. One

should not expect miracles from a government with such roots (not even a new one, although hope springs eternal, etc., and I am willing to be pleasantly surprised). Is it possible to attack such a deeply rooted view? My faith in using 'the media' for such purposes is very limited: that avenue amounts to a lobby of the public.

What remains, then, is the education system. A multitude of comments spring to mind about the present state of that institution, but it is there, in elementary school and high school, that life-long attitudes are formed. Attempting to effect a change through the education system is a rather daunting prospect, and the process carries with it a long time scale. The only alternative is to shout loudly at bureaucrats and TV cameras.

Chris Purton

APPLICATIONS FOR MEMBERSHIP IN THE IAU

I am presently writing to the heads of all Canadian astronomical institutions, inviting them to nominate Canadian astronomers for membership in the IAU, or for invited participant status at the IAU General Assembly in New Delhi. If you (or anyone of whom you are aware) are interested in IAU membership or invited participant status, and are qualified, and have not received an application form through the head of your institution, you can write to me for information and application forms. The normal qualifications for membership are: Canadian citizenship or landed immigrant status, current employment in Canada, a Ph.D. received prior to August 26, 1982 (or an M.Sc. received prior to September 2, 1976), and active involvement in astronomy. Applications should be sent to me by November 30. They will be considered by a subcommittee consisting of Jim Hesser, Georges Michaud and myself, which will then report to the IAU National Committee for Canada.

The IAU also wishes to know of any members who are indifferent to or opposed to continuing their membership in the Union. If you by any chance fall into that category, please notify me or one of the other subcommittee members. Resignation is entirely voluntary.

Finally, IAU members who wish to join a specific commission should write to the Chairman of that commission to apply for membership in that commission.

John R. Percy
Chairman: Membership Subcommittee
IAU National Committee for Canada
Department of Astronomy
University of Toronto
Toronto, Ontario M5S 1A1

CANADIAN ASTRONOMY PREPRINTS

JUNE 11, 1984 TO SEPTEMBER 7, 1984

The following file contains a list of preprints written by Canadian astronomers. All preprints were received at the Astronomy Library within the dates as stated above.

The file is arranaged in alphabetical order according to the surname of the first listed author of each preprint. Originating institution and date of receipt at the library are listed.

If you have distributed a preprint and would like it to be included in this list, please send it to:

Astronomy Library
University of Toronto
Room 1306
60 St. George Street
Toronto, Ontario
M5S 1A7

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Arellano Ferro, A. Periodicity and pulsational mode of five bright yellow supergiants. U of T/ U Mexico. 84.06.29.

Bietenholz, Michael F. and Philipp P. Kronberg. Is there really evidence for universal rotation? U of T. 84.06.18.

Bolton, C.T. The helium spectrum variables; the photospheres and magnetospheres of the magnetic B stars. DDO/U of T. 84.07.19.

Bolton, C.T. and Ron W. Lyons. HD 91948 in not a Be star. DDO/U of T. 84.08.29.

Borra, Ermanno F., Geoffrey Edwards and M. Mayor. The magnetic fields of the late type stars. U Laval. 84.09.06.

Broten, N.W., J.M. Macleod and J.P. Vallee. An observational trend for large (100-300 pc) interstellar magnetic (1-10 mu gauss) bubbles. HIA. 84.08.24.

Crampton, D., J.B. Hutchings, D.J. Schade, A.P. Cowley and L.P. van Speybroeck. Optical counterparts for x-ray sources in M31. DAO. 84.06.21.

De Robertis, Michael. QSO evolution in the interaction model. DAO. 84.06.21.

Fiedler, Ralph and R.N. Henriksen. Jet deflection by ram pressure and pressure gradients. CITA. 84.06.19.

Forbes, Douglas and C.D. Scarfe. UBV photometry of the 1981 eclipse of RZ Ophiuchi. U Victoria. 84.06.12.

Garrison, R.F. The use and abuse of standard stars. DDO/U of T. 84.06.27.

Gower, Ann C. and J.B. Hutchings. Radio and optical morphology of low redshift quasars. DAO. 84.09.05.

Harris, William E. and Sidney van den Bergh. The distant globular clusters Palomar 14 and Palomar 15. DAO. 84.08.14.

Henriksen, R.N. and B.E. Turner. Star cloud turbulence. CITA. 84.06.19.

Higgs, Lloyd A. and Jacques P. Vallee. Discovery of a remarkable cometary-shaped radio source. DRAO/HIA. 84.07.09.

Hutchings, J.B., D. Crampton, A.P. Cowley, I.B. Thompson. R31: a massive O+W-R star binary in the SMC. DAO. 84.08.14.

Irwin, Alan W. Improved methods of predicting stellar atmospheres from known atmospheres in the presence of convection. U Victoria. 84.08.14.

Kormendy, John. Recognizing merger remnants among normal elliptical galaxies: NGC 5813. DAO. 84.07.09.

Kormendy, John. The velocity dispersion in the disk of the SBO galaxy NGC 936. DAO. 84.07.09.

Kormendy, John. The velocity dispersion in the disk of the SO galaxy NGC 1553. DAO. 84.07.09.

Kronberg, Philipp P., P. Biermann, Frederic R. Schwab. The nucleus of M82 at radio and X-ray bands: discovery of a new radio population of supernova candidates. U of T. 84.07.19.

Madore, Barry F. Cepheid variables as extra-galactic distance indicators. DDO/U of T. 84.09.05.

Martin, P.G. Optical and infrared polarization of active galactic nuclei. CITA/U of T. 84.06.11.

McAlary, Christopher W. and Douglas L. Welch. The distances to nearby galaxies from near-infrared photometry of cepheids. U of T. 84.08.27.

McClure, Robert D. Binary systems among the peculiar cool stars. DAO. 84.08.14.

Percy, John R. Five suspected Beta Cephei stars revisited. DDO/U of T. 84.07.04.

Percy, John R., Michael Bietenholz and Alex Fullerton. The photometric variability of Epsilon Persei. DDO/U of T. 84.07.04.

Percy, John R. Bicentenary of cepheid variables. DDO/U of T. 84.07.27.

Pritchet Chris and Sidney van den Bergh. Flattening and luminosity profile of the globular cluster Mayall II in M31. DAO. 84.08.14.

Racine, Rene. Astronomical seeing at Mauna Kea and in particular at the CFHT. CFHT. 84.06.15.

Roy, Jean-Rene and Gilles Joncas. Structure and origin of velocity fluctuations in the HII region Sharpless 142. U Laval. 84.07.05.

Roy, Jean-Rene, Robin Arsenault, Louis Noreau. The anomalous arms of the spiral galaxy NGC 4258. U Laval. 84.08.22.

Rusk, Raymond and E.R. Seaquist. Alignment of radio and optical polarization with VLBI structure. U of T. 84.08.22.

Vallee, J.P. Effects of interstellar magnetic bubbles and of galactic tides on galactic magnetic fields. HIA. 84.06.15.

van den Bergh, Sidney. Annual report of the Dominion Astrophysical Observatory for the year 1983 April 1 to 1984 March 31. DAO. 84.06.21.

van den Bergh, Sidney. A search for long-period cepheids in associations. DAO. 84.07.09.

van den Bergh, Sidney, P. Frank Younger and David G. Turner. A search for OB associations near long-period cepheids. III. U Carinae, XZ Carinae, QY Centauri, VX Crucis and AA Normae. DAO. 84.08.14.

van den Bergh, Sidney and Andy LaFontaine. Luminosity function of the integrated magnitudes of open clusters. DAO. 84.09.05.

Welch, D.L., Nancy Remage Evans and G. Drukier. Cepheid radii from infrared photometry. U of T. 84.08.27.

Welch, D.L., C.W. McAlary, R.A. McLaren and B.F. Madore. The infrared distance scale: the galaxy and the Magellanic Clouds. U of T. 84.08.27.

Welch, D.L., C.W. McAlary, B.F. Madore, R.A. McLaren and G. Neugebauer. An improved calibration of the near-infrared period-luminosity relations for cepheids. U of T. 84.08.27.

SUMMARY OF THE CASCA BOARD OF DIRECTORS TELECONFERENCE of SEPTEMBER 11, 1984 14:45 to 15:59 EDT

Participants: John MacLeod (Chairman), Ernest Seaquist, Chris Purton, Chris Aikman, John Climenhaga, Bruce Campbell, Michael Marlborough, George Mitchell, Vic Gaizauskas.

1. CONSIDERATION OF THE "COLLABORATIVE OPTIONS FOR THE CANADIAN LONG BASELINE ARRAY" REPORT dated 1984 August 3.

Chairman MacLeod opened the teleconference with a suggested agenda for the consideration and utilization of this report of the CLBA planning committee. Ernie Seaquist as chairman of this committee then summarized the contents of the report, which by now should be in the hands of all CASCA members. He noted that the 1982 September 27 report was presented to NSERC and NRC almost two years ago, and has been stalled at the level of the Ministry of State for Science and Technology (MOSST) from shortly after its presentation until the present time. His impression that MOSST considered the proposal too costly in capital and manpower has since been confirmed.

Counter to this negative stance, there have been very positive developments in the U.S. (VLBA), in Europe (EVN), and in space radio astronomy (QUASAT) which make Canadian participation in international long baseline interferometry attractive to all parties, even with as few as four antennas based in Canada. In response to these developments, the Planning Committee began in February 1984 to examine all possibilities of Canadian collaboration in these projects with the full CLBA and with scaled-down versions of the original concept. The report details the so-called CLB4 option, which has reduced capital and operational cost and a reduced construction timetable of four years, as compared to the full CLBA. Headquarters costs are not reduced, because of the need to retain or enlarge the data processing abilities for these collaborative options. The CLB4 array could ultimately be expanded to the full 9-element array, and the full CLBA is still unanimously preferred by the planning committee because of its stand-alone capabilities for astronomy. Nonetheless, the new report shows that other options are available, and demonstrates a new initiative which may re-open the funding stalemate.

Several recognizable uncertainties remain. Foremost is the need for an international agreement to use the CLB4 collaboratively. Another is that the U.S. VLBA approval is qualified, with no commitments for construction to be made before April 1, 1985. Another is the interest of the government of Alberta in having two antennas and the headquarters located in that province: it is possible that they might negotiate a deal with the federal government which would cover a substantial amount of in-province costs.

Some discussion ensued on whether the federal government's reaction to the proposal would be affected by the change of government. Although the new government is avowedly committed to expanding the federal research and development effort, their advisors within MOSST, NSERC and NRC are the same as previously, and it would be unrealistic to expect their priorities to have changed drastically.

Aikman questioned the redundancy of the antennas at Penticton (which is very close to the Oroville station of the VLBA) and at ARO (close to the 46 m telescope). Seaquist replied that the Oroville antenna might be built at Brewster, Washington instead, where it would be sufficiently spaced from the DRAO Penticton location to give useful spacings in a CLB4+VLBA linkup. Also, the ARO station could be spaced away from the 46 m antenna, perhaps even to the Ottawa area, so that the latter could be used as an extra element if required. Purton expressed the viewpoint that the 46 m telescope be keep seperate from the CLB4 or CLBA because of its commitment to millimeter wave observations. He stated that although a 'world array' is seen as the ultimate use of either CLB option, the 9 element form is preferred as a first step, since the data

processing demands of a many-element world array pose many practical difficulties at the present time.

Chairman MacLeod called for a vote on the acceptance of the CLBA Planning Committee's report of 1984 August 3 as circulated, and the report was unanimously accepted by the Board.

Discussion then ensued on the use and disposition of the report. As intended, the report will be forwarded to the presidents of NRC and NSERC. Of the 500 copies printed, 250 (approximately) remain available; also another 250 copies of the 1982 September 27 report are being reprinted. It was considered appropriate to distribute both reports widely to senior politicians (including members of the new cabinet) and ministry officials (in MOSST and EMR) and also to members of industry with an interest in the project; the Planning Committee shall undertake this distribution as soon as possible. The expediency of the current situation was recognized.

MacLeod then opened discussion on the matter of priority that the Society should assign to the CLB options relative to any other projects in Canadian astronomy (eg. in space or optical astronomy); the advantages of the full CLBA over the CLB4 are clearly stated in the report and were not further discussed at this time. Several members clearly stated their distaste for the idea of ranking a radioastronomical project relative to a space astronomy one, for example, since both are vital areas worthy of future support. Counter to this, the argument was made that failure to assign priorities would be perceived as a lack of will on our part; the lack of strong priority to the Starlab project by the Society was seen as a key element in its demise. At this stage, no other major project exists in competition to the CLB proposals, so we have nothing to loose and everything to gain by retaining the top priority (without qualification as to ground-based or space astronomy) that was accorded this project by the membership at the Annual General Meeting in June 1984. At the present time, there is little reason to believe the Starlab proposal can be revived, unless a fourth partner (eg. Japan) enters the project, in which case Canada might re-enter the project in some as yet undefined way as a minor partner. The unlikelyhood of any such immediate development, and the urgency to press forward with the CLB now if it is to sustain any chance of approval were seen as reasons to retain CLBA or CLB4 as the top priority for Canadian astronomy.

MacLeod called for a vote, and the Board voted unanimously that the CLB options as outlined in the report just adopted remain the number 1 priority for new instrumentation for Canadian astronomy.

2. OTHER BUSINESS:

MacLeod suggested that other business not of an urgent nature be deferred to the December Board meeting. At that time the question of converting committee recommendations presented at an annual general meeting into Society policy will be dealt with. Plans to produce a television special on astronomy have not proved viable so far; Bell Northern has responded negatively to the idea of sponsoring such a production. On the other hand, John Percy at University of Toronto is optimistic about a public lecture presentation at the 1985 CASCA Annual Meeting. The viability of this meeting being a joint CFH one is still not clear; this option will vanish if no commitment is made soon. MacLeod will contact Bob McLaren at CFHT to assess their interest and involvement.

The next meeting of the Board will be on Monday, December 3, 1984 at the DAO in Victoria, and will probably commence at 09:00 PST at the former Director's Residence (known as the White House) between the two largest domes on the hill.

Chris Aikman, Secretary
September 12, 1984.

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