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# CASSIOPEIA

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## ADDRESS CHANGES

Dr. Serge Demers  
 CASCA Secretary  
 Département de Physique  
 Université de Montréal  
 Montreal, Quebec  
 H3C 3J7  
*casca@astro.umontreal.ca*  
 Do not forget to update your  
 own e-mail address

**OBSERVATOIRE DU MONT MEGANTIC**

7ieme Rencontre  
21 (pm) au 23 (midi) mars 1996  
St-Lucie des Laurentides  
[moffat@astro.umontreal.ca](mailto:moffat@astro.umontreal.ca)  
(Tony Moffat)

**CASCA 1996 - New Windows on the Universe**

1 - 4 June 1996, Queen's University,  
Kingston, Ont.  
[Hanes@bill.phy.queensu.ca](mailto:Hanes@bill.phy.queensu.ca)  
(David Hanes)  
<http://astro.queensu.ca/~casca96>

**188th Meeting of AAS**

9 - 13 June 1996, Madison, WI  
[bless@sal.wisc.edu](mailto:bless@sal.wisc.edu)  
(Bob Bless)

**Cosmology: The Big Picture**

7-10 August 1996, Iqaluit, NWT  
[baffin@theory5.phys.cwru.edu](mailto:baffin@theory5.phys.cwru.edu)  
(Glenn Starkman)

**IAU 7th Asian-Pacific Regional Meeting**

19 - 23 August 1996, Pusan, Korea  
[iauap@astrophys.es.pusan.ac.kr](mailto:iauap@astrophys.es.pusan.ac.kr)  
(Hyung Mok Lee)

**2nd Naramata Summer School**

**The Interstellar Medium**  
26 - 30 August 1996, Naramata, BC  
[agray@drao.nrc.ca](mailto:agray@drao.nrc.ca)  
(Andy Gray)

**12th "Kingston Meeting" - Computational Astrophysics**

17 - 19 October 1996, Halifax, NS  
[dclarke@ap.stmarys.ca](mailto:dclarke@ap.stmarys.ca)  
(David Clarke)  
<http://apwww.stmarys.ca/kingston/>

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**Editorial Note**

Some readers have pointed out that the CASCA home page has not been updated recently. this is because a new Official home page is in preparation by the CASCA Board. The new improved version will be installed at the CASCA Office at Queen's U in the near future. If you do have any updates for the home page please do keep them coming and I will undertake to forward them to the CASCA Office. Alternatively, you can forward them yourselves to [casca@astro.queensu.ca](mailto:casca@astro.queensu.ca). Watch for an announcement about the new home page and continuation of the Electronic CASSIOPEIA in these pages as the weather warms up.

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**Cosmology: The Big Picture**  
**Aug. 7-10, Iqaluit (Frobisher Bay),**  
**Baffin Is., NWT, Canada**

Dear Colleague,

We are going to be holding a conference on cosmology this Aug. 7-10, 1996. We feel that the subject has grown so much in recent years that it is time to gather a small group of active researchers from a wide variety of areas, to encourage cross-fertilization and new perspectives.

A unique feature of this conference is its site: the conference will take place in Iqaluit, a town of 3000 people which is the largest population centre on Baffin

Island, in Canada's Northwest Territories. Iqaluit is about 2000 kilometers north of Montreal (actually, it is due north of Bangor, Maine), and the jumping-off point for a wide range of wilderness activities in Canada's Northwest Territories and Greenland. In particular, it is only 250 km from the Auyuittuq National Park, the location of some of the most spectacular scenery in northern Canada.

Other features of the conference will include:

- no published proceedings
- no travel support, i.e. everyone pays their own way, even invited speakers. Airfare from Toronto to Iqaluit is roughly CDN\$900 (US\$650) on First Air, an Air Canada affiliate, though we may be

able to negotiate a group discount. Travel to Iqaluit is available through the frequent flyer program of Air Canada, which has reciprocal agreements with United Airlines.

- all organization done by e-mail
- maximum size 50 scientists (the hotels in Iqaluit are small)

Some of the people who have given various strengths of commitment to attend are:

C. Alcock, A. Babul, R. Blandford, J.R. Bond, R. Carlberg, M. Davis, R. Ellis, W. Freedman, J. Frieman, P. Goldreich, J. Huchra, L. Hernquist, A. Jaffe, M. Kamionkowski, N. Kaiser, L. Krauss, S. Lilly, D. Lynden-Bell, R. Malaney, A. Olinto, J. Ostriker, P.J.E. Peebles, C. Pritchett, D.N. Schramm, D. Spergel, P. Steinhardt, M. Strauss, M.S. Turner, W.G. Unruh, T. Vachaspati, S. White.

Glenn Starkman, Scott Tremaine

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**FIRST ANNOUNCEMENT**  
**The 2nd Naramata Summer School on**  
**THE INTERSTELLAR MEDIUM**  
**26-30 August 1996, Naramata, BC**

DRAO/HIA is hosting a Summer School on the Interstellar Medium, to be held in Naramata, near Penticton, BC, between Monday, August 26th, and Friday, August 30th, 1996. The Summer School will be aimed at graduate students, post-doctoral fellows, and any other researchers interested in furthering their knowledge of ISM studies, with presentations focussing on fundamental aspects of ISM science as well as introducing relevant topics in current research.

The programme will emphasize research on the distribution, kinematics, and physical state of the interstellar medium (ISM) which requires high resolution

observations over a large area. Overview talks will discuss non-equilibrium and non-linear interactions among radiation processes, shocks, material transport, magnetic fields, and chemical processes which lead to coupling between large and small scales in the ISM. Recent and future wide-field observations of the emission from ISM components in many wave-bands and their impact on ISM science will also be highlighted.

The venue for the Summer School will be the Naramata Centre, a conference facility in the village of Naramata, on Okanagan Lake. The

Centre is self-contained, with low-cost, on-site accommodation and dining for participants and their families (special dietary needs can be accommodated), and is set on spacious grounds with a private beach, not far from scenic Okanagan Mountain Provincial Park. During August the weather is generally warm and sunny, eminently suitable for outdoor recreations, making for a pleasant, retreat-like atmosphere only 20km from Penticton.

In keeping with the idyllic setting, the Summer School will adopt a relaxed pace, with a modest number of presentations on each day, and two half-days set aside for excursions in the local area. Scientific events related to the topic of the Summer School may also be planned for some evenings. Discussions of some aspects of the multi-wave-band Galactic Plane Survey project currently being undertaken by a consortium of Canadian and international astronomers, with the aim of studying the ISM, may also feature.

It is estimated that accommodation and meals for the duration of the summer school will cost around \$300-400. Penticton can be reached by air or surface transportation. We expect to have funds available to assist with the expenses of graduate students and post-docs who wish to attend the summer school.

#### Local Organizing Committee

Andrew Gray (Chair) [agray@drao.nrc.ca](mailto:agray@drao.nrc.ca)  
 Cindy Furtado  
 Lloyd Higgs  
 Tom Landecker  
 Chris Purton  
 Rob Roger

## 12th KINGSTON MEETING

### ON THEORETICAL ASTROPHYSICS

TOPIC: COMPUTATIONAL ASTROPHYSICS

DATES: OCTOBER 17, 18, 19, 1996

LOCATION: HALIFAX, NOVA SCOTIA, CANADA

HOSTED BY: SAINT MARY'S UNIVERSITY

SPONSORED BY:

THE CANADIAN INSTITUTE FOR THEORETICAL ASTROPHYSICS  
 THE DEAN OF SCIENCE, SAINT MARY'S UNIVERSITY

#### CONFIRMED INVITED SPEAKERS:

M. Duncan (Queens)  
 M. Norman (NCSA, Illinois)  
 M. Pinsonneault (Ohio State)  
 J. Stone (Maryland)  
 J. Toomre (JILA, Colorado)

The purpose of this meeting is to bring together theoretical Astrophysicists of varied interests to discuss the current scope of computational astrophysics both in Canada and abroad, and which directions the community

may want to take. While such a meeting may be broad scientifically, computational astrophysicists of all areas of study are bound by mutual interests, common methodology, and, particularly in this country, problems accessing high-speed and large-memory computing.

This is the first meeting of this type to be held in Canada and the motivation is, of course, primarily scientific. However, as we enter into the next century with government funding for science

becoming increasingly scarce, it would behoove our community to leave this meeting with a clear idea of our goals, what resources we may require, and what the return for those investments shall be.

We are targetting 40 to 60 participants for this meeting from the international community. We will have about 12 invited speakers of all areas in computational astrophysics to bring the cognizant but non-specialist up to speed in the various areas of this rapidly growing field.

Contributed talks are welcome from all areas of computational astrophysics, and we shall fit these into the schedule on a first-come-first-served basis. Limited travel assistance is available for students and post-doctoral fellows without travel budgets. For more information and to indicate your interest in this meeting, check out the 'Kingston' home page at:

<http://apwww.stmarys.ca/kingston/>

**SCIENTIFIC ORGANISING COMMITTEE:**

D. Clarke (Saint Mary's)  
D. Henriksen (Queen's)  
M. Norman (NCSA, Illinois)  
S. Tremaine (CITA, Toronto)  
D. VandenBerg (Victoria)

**LOCAL ORGANISING COMMITTEE:**

M. Butler (Saint Mary's)  
D. Clarke (Saint Mary's)  
A. Coley (Dalhousie)  
G. Mitchell (Saint Mary's)  
M. West (Saint Mary's)



**Postdoctoral Fellow**

**Physics Department  
UNIVERSITY OF WATERLOO  
Waterloo, Ontario  
Canada N2L 3G1**

A postdoctoral position in astronomy will be available in the Department of Physics at the University of Waterloo beginning 1 September, 1996. The term of this appointment will be one year, probably renewable for a second year but contingent upon funding. This position will require some teaching (one course per year, 3 "hours" of lectures per week for 13 weeks, plus exams). Preference will be shown for candidates with research interests similar to other members of the Astronomy Group at Waterloo. Active research areas within the Astronomy Group include: cosmology, gravity, dark matter, galaxies, interstellar matter and star formation, star clusters, galactic structure, and laboratory astrophysics. The application deadline is 15 March, 1996.

To apply please send a curriculum vitae including publications list, a brief statement of research interests, and the names and addresses of three references to *Prof. Mike Fich* at the above address.

## VACANCY NOTICE RESIDENT ASTRONOMER

Applications are invited to fill one of the CFHT Resident Astronomer positions supported by Canada. The appointment is for a period of three years beginning 1 August 1996, and is renewable.

CFHT is particularly interested in attracting a scientist with strong instrumentation skills who could preferably guide development in one of more of the following domains: adaptive optics, integral-field and multi-object spectroscopy, high-resolution spectroscopy, CCD detectors, infrared arrays.

Resident Astronomers have one third to one half of their time available for personal research and are expected to be active users of the 3.6-m telescope on Mauna Kea. The research facilities at the Waimea headquarters include an astronomical library and a network of Sun Microsystems computers and workstations. Resident Astronomers are responsible for providing support to visiting observers in the preparation and performance of their observing runs. They act as project scientists for the development of instrumental or software projects. They carry out service observing and participate in the training of observing assistants. Resident Astronomers also perform various other tasks associated with the scientific activities of CFHT.

Minimum requirements are a Ph.D. or equivalent in astronomy or physics, combined with experience in astronomical instrumentation and observation using large telescopes. Technical knowledge of CCDs and/or infrared array detectors plus instrument development is particularly desirable. The individual selected must pass a physical examination showing aptitude to work at 4200 meters altitude.

The salary range envisioned starts at U.S. \$45,000 per year. A competitive benefit package and relocation assistance are also provided.

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

## POSTE VACANT ASTRONOME RÉSIDENT

Des candidatures sont sollicitées pour combler le poste canadien d'Astronome RÉSIDENT du TCFH. L'emploi est d'une durée de trois ans débutant le 1er août 1996, avec la possibilité de renouvellement.

Le TCFH recherche particulièrement un(e) scientifique possédant une solide formation en instrumentation et qui pourrait, de préférence, diriger le développement d'un ou de plusieurs projets dans les domaines suivants: optique adaptative, spectroscopie à champ intégral ou multi-objets, spectroscopie à haute résolution, détecteurs infrarouges.

Les Astronomes Résidents peuvent consacrer un tiers à la moitié de leur temps à des projets de recherche personnels; il est souhaitable qu'ils utilisent couramment le télescope de 3.6m du Mauna Kea. Les installations de recherche aux bureaux de Waimea comprennent une bibliothèque astronomique ainsi qu'un réseau d'ordinateurs et de stations de travail de type Sun. La tâche des Astronomes Résidents consiste à aider les observateurs visiteurs à préparer et à mener à bien leur mission d'observation. Ils agissent à titre de responsable scientifique de projet dans le cadre du développement des instruments ou des logiciels. Ils sont chargés de réaliser les projets d'observation en mode de service et ils participent à la formation des techniciens d'observation. Finalement, les Astronomes Résidents accomplissent de nombreuses autres tâches associées aux activités scientifiques du TCFH.

Les exigences minimales sont un doctorat (ou l'équivalent) en astronomie ou en physique, ainsi qu'une connaissance de l'instrumentation astronomique et des observations avec les grands télescopes. Des connaissances techniques sur les CCDs et/ou les détecteurs infrarouges ainsi que sur la fabrication des instruments sont particulièrement souhaitables. La personne sélectionnée devra subir un examen médical avec succès et être apte à travailler à une altitude de 4200 mètres.

L'échelle salariale débute à \$45,000 US par année. La Société fournit aussi des bénéfices

Applications will be received until 1 March 1996  
by:-  
*Canada-France-Hawaii Telescope Corporation*  
*Attention: Resident Astronomer Search*  
*P.O. Box 1597*  
*Kamuela, Hawaii 96743 - USA*

Donald C. Morton Tel: 604 363 0040  
Director General Fax: 604 363 8483  
Herzberg Institute of Astrophysics  
e-mail: [don.morton@nrc.ca](mailto:don.morton@nrc.ca)

marginiaux avantageux ainsi qu'une assistance  
lors du déménagement.

Les lettres de candidature doivent comprendre  
un curriculum vitae détaillé, une liste des  
publications, une description des projets de  
recherche incluant ceux qui sont particulièrement  
adaptés au TCFH, et les noms de trois  
professionnels pouvant fournir des lettres de  
recommandation. La date limite de la réception  
des candidatures est le 1 mars 1996; les  
candidatures doivent être envoyées à l'adresse  
suivante:-

*Société du Télescope Canada-France-Hawaii*  
*A l'attention de: Resident Astronomer Search*  
*P.O. Box 1597*  
*Kamuela, Hawaii 96743 - USA*

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## Department of Physics and Astronomy THE UNIVERSITY OF CALGARY

A University consortium and the Dominion Radio Astrophysical Observatory are undertaking a survey of the atomic hydrogen and radio continuum emission from the Galaxy at 1 arcminute resolution. The general goals of the project are to generate a unique, high angular resolution, high spatial dynamic-range image of the Galactic Plane for multi-phase studies of the physical states and processes in the interstellar medium. We are seeking a research associate to aid in processing the synthesis images and in development of analysis and visualization software. The appointee will also be expected to carry out an interstellar medium research program as part of a project science team. Opportunity exists to collaborate with researchers involved in complementary projects at IPAC, FCRAO and MRAO.

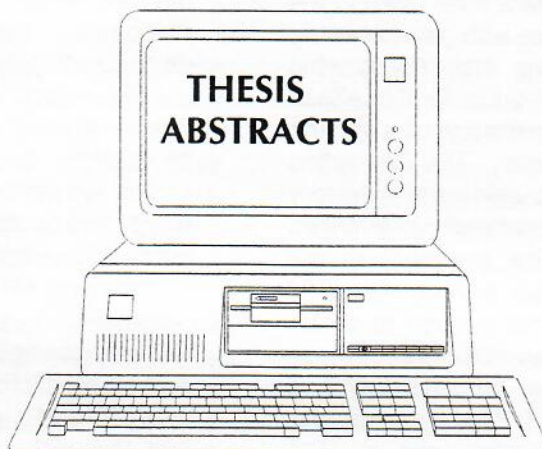
Candidates should possess experience in aperture synthesis techniques, image processing and analysis, visualization of three-dimensional astrophysical data, and have specific interest in astrophysics of the interstellar medium. The initial appointment will be for two years, with possibility for renewal. Interested individuals should submit a curriculum vita and a statement of research interests, and arrange for three letters of reference to be sent to:

A.R. Taylor,  
Physics and Astronomy,  
University of Calgary,  
2500 University Drive N.W.,  
Calgary, Alberta, Canada,  
T2N 1N4.

Applications received before 1 April, 1996 will be given full consideration.

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Please send copies of Thesis Abstracts via email, or snailmail, to the editor:  
*jpenfold@mtroyal.ab.ca*

**Steady-State Solutions to the Oblique CR-MHD Jump-Shock Conditions**

*Glen Petitpas*

**Undergraduate Honours B.Sc. Thesis,  
 Saint Mary's University**

**April 1994**

**Supervisor: Dr. D. A. Clarke**

Almost everything in the universe is plasma, including stars and the interstellar medium. One of the best tools for understanding plasma dynamics in the cosmos is magnetohydrodynamics (MHD) which assumes, among other things, charge neutrality -- an excellent approximation to plasma dynamics on relatively large distance scales. In addition, cosmic rays (CR) play an important role in astrophysics, and, in particular, they are fundamental to the structure of astrophysical shocks. Because of their diffusive properties, CRT's can transmit information in an astrophysical plasma faster than the shock itself, thereby creating a so-called "CR-foot" leading the shocks. The equations governing CR-MHD shocks in one dimension consist of 13 equations and 13 unknowns. These can be solved analytically to determine the post- and interior-shock conditions from the initial conditions. Comparison between these analytical solutions and solutions determined numerically are made.

Along with providing a means of obtaining steady-state solutions, this thesis provides a CR-MHD version of the well-known Brio and Wu (1988) shock tube test for CR-MHD computer programs. There are runs that contain the original Brio and Wu test (no CR), a similar test with the CR-fluid only, and a run with equal part of both the ambient gas fluid and the cosmic-ray fluid.

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**A Photometric and Spectroscopic Survey of AGB Stars in M31**

*James Philip Brewer*

**University of British Columbia**

**Ph.D., 1995**

**Supervisor: Harvey B. Richer**

Asymptotic giant-branch (AGB) stars are identified and classified in five 7'x7' fields spaced along M31's SW semi-major axis using a four band photometric system. An investigation of the AGB luminosity functions and red giant-branch widths reveals significant differences between the star forming histories of the five fields. The distance modulus of M31 is derived using carbon stars (C-stars) and found to be consistent with both a value obtained from Cepheids and with values in the literature.

The ratio of AGB C- to M-stars (C/M ratio) in the five fields is found to increase with galactocentric distance and it is shown that photometric incompleteness is not responsible for this effect. This is the first clear demonstration of a varying C/M ratio in an external galaxy. The C/M ratios appear to be insensitive to star-forming history differences but sensitive to metallicity differences between the fields. Previous observations are used to define a relationship between the C/M ratio and metallicity, and this is used to obtain estimates of the field metallicities. These estimates are found to be consistent with a previous measurement of M31's metallicity gradient. The C/M ratios measured in M31 indicate that the composition of M31's interstellar medium may be position dependent, and evidence is cited in favour of this.

Follow up spectroscopy was obtained in two of the five fields, and is used to show that the photometric system did an excellent job of discriminating between M-, S- and C-stars. Of the 48 C-stars for which spectra were obtained, 7 have strongly enhanced C<sup>13</sup> bands (J-stars), 2 have strong H- $\alpha$  emission, while 3 are found to exhibit enhanced Li absorption (Li-stars). Both the J- and Li-stars are fainter than predicted by current theoretical models, while the colours of the H-alpha stars suggest they may be in the terminal phases of their evolution. The C<sub>2</sub> and CN bandstrengths of the C-stars are measured, and no correlation between these bandstrengths and either M<sub>bol</sub> or (V-I) is found. It is suggested that this lack of correlation is due to an age spread. The spectra of the first confirmed S-star in M31 is presented, and two evolutionary pathways are suggested to account for this star's high luminosity.

### - TO THE CASCA MEMBERSHIP -

With your notice for annual dues in September, you received an invitation to make a donation to Cascatrust, directed either to the educational activities of Cascatrust and/or the FSU Travel Grant Program. Some of you may have already made such donations, but I would like to remind you that it is not too late if you have not already done so! In particular, I would like to bring the FSU Travel Grant Program to your attention again. This is the last fund-raising campaign for this program (see the most recent issue of Cassiopeia, No. 88, for details on how effective the program has proven to be) and I would like to see it end on a high note! In our

first two campaigns, CASCA members donated \$3200 to this cause. We have just passed the \$1000 mark in the current campaign. I would hope that we could double this by the end of the program (spring 1996). Please consider seriously a further donation -- where else can a \$50 donation have such great scientific and compassionate benefit.

Donations should be clearly indicated as to their Cascatrust target (educational activities or FSU Travel Grants), the donor and the donor's address, and be sent to:

Canadian Astronomical Society  
 Attention: Mrs. R. Hanes  
 Department of Physics, Stirling Hall  
 Queen's University  
 Kingston, Ontario K7L 3N6

Lloyd Higgs  
 Chair, CASCA FSU Travel Grant Committee  
 lah@drao.nrc.ca

## Electronic Submission of CFHT Proposals

HIA has implemented a system to handle the electronic submission of CFHT proposals starting for semester 96//. This system, which is based upon the system in use at KPNO, will allow proposers to retrieve the current LaTeX templates and to submit their proposals, including PostScript figures, via e-mail.

This system is being introduced for Semester 96// as an experiment. If this experiment is successful from both the community and HIA perspectives, it will be adopted for continued use in the future. We shall continue to accept hard-copy proposals while we test the new system. These must be mailed to:

Canadian Applications Committee CFHT  
c/o Director Herzberg Institute of Astrophysics  
Dominion Astrophysical Observatory  
5071 W. Saanich Road  
Victoria, BC  
CANADA V8X 4M6

**NOTE:** Seven (7) original [not FAX] copies.

The following e-mail addresses are in effect for e-mail submission:

*cfhtprop-info@dao.nrc.ca*: Get CFHT proposal retrieval instructions

*cfhtprop-request@dao.nrc.ca*: Get CFHT proposal package by email

*cfhtprop-submit@dao.nrc.ca*: Submit CFHT proposal by email

*cfhtprop-help@dao.nrc.ca*: Ask a human about a CFHT proposal

Proposals for semester 96// will be accepted until Midnight (PST) on March 1, 1996.

If you have any questions regarding the e-mail submission of CFHT proposals please contact Dennis Crabtree *crabtree@dao.nrc.ca* 604-363-0025.

## Soumission Électronique des Demandes de Temps au TCFH

L'IHA a établi un système pour recevoir par courrier électronique les demandes de temps pour le TCFH, pour le semestre 96//. Ce système, basé sur celui en service au KPNO, permet aux demandeurs de quérir les formulaires en LaTeX en usage, et de soumettre leurs demandes de temps, avec les figures en PostScript, par malle Électronique.

Ce système débute avec le Semestre 96//, à titre d'expérience. Si cette expérience est concluante d'après le point de vue de la communauté et celui de l'IHA, il sera adopté pour usage permanent dans le futur. Nous continuerons d'accepter les Demandes de temps sur papier, pendant que nous testons le nouveau système. Les demandes de temps sur papier doivent être envoyées par la poste à:

Comité des Applications Canadien TCFH  
a/s Directeur, Institut Herzberg d'Astrophysique  
Observatoire fédéral d'Astrophysique  
5071 W. Saanich Road,  
Victoria, BC  
CANADA V8X 4M6

**NOTE:** Sept (7) copies originales (pas de FAX).

Pour les soumissions électroniques, les adresses sont:

*cfhtprop-info@dao.nrc.ca*: Obtenir instructions pour Demande au TCFH

*cfhtprop-request@dao.nrc.ca*: Obtenir un Formulaire de Demande au TCFH

*cfhtprop-submit@dao.nrc.ca*: Soumission d'une Demande au TCFH par courrier électronique

*cfhtprop-help@dao.nrc.ca*: Contact humain sur une Demande au TCFH

Les Demandes de Temps pour le Semestre 96// seront acceptées jusqu'à Minuit (PST) le 1 mars 1996.

Si vous avez des questions concernant la soumission Électronique de demandes de temps au TCFH, svp contactez Dennis Crabtree *crabtree@dao.nrc.ca* – 604-363-0025.

Other inquiries regarding your proposal can be directed to Jacques Vallée ([vallee@hiaras.hia.nrc.ca](mailto:vallee@hiaras.hia.nrc.ca)). Don Morton recently appointed Jacques as Technical Secretary for both the CFHT and JCMT Time Assignment Procedures. He will assist the Time Assignment Chair of each Committee.

Les autres demandes concernant votre Demande de temps peuvent être envoyées à Jacques P. Vallée ([Vallee@hiaras.hia.nrc.ca](mailto:Vallee@hiaras.hia.nrc.ca)). Récemment, Don Morton a nommé Jacques en tant que Secrétaire Technique pour les Comités d'Allocation de Temps canadiens (TCFH et TJCM). Il aidera le Chef de ces deux Comités d'allocation de temps.

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### **Canadian Observing Time on the James Clerk Maxwell Telescope (JCMT) for Semester 96A (1 February 1996 to 31 July 1996)**

### **Temps d'Observation Canadien au Télescope James Clerk Maxwell (TJCM) pour le semestre 96A (1 février 1996 au 31 juillet 1996)**

#### **\* Introduction**

#### **\* Introduction**

The 15-meter JCMT, the largest facility in the world designed specifically to operate at submillimeter wavelengths, has receivers that observe at wavelengths from 2 millimeters (150 GHz) to 350 microns (860 GHz) for continuum observations, and from 1.4 millimeters (215 GHz) to 430 microns (690 GHz) for line observations.

Le TJCM de 15 mètres de diamètre, le plus large instrument spécifiquement créé pour opérer aux longueurs d'onde sous-millimétriques, possède des récepteurs pouvant observer aux longueurs d'onde de 2 millimètres (150 GHz) jusqu'à 350 microns (860 GHz) pour observations du continuum, et de 1.4 millimètres (215 GHz) jusqu'à 430 microns (690 GHz) pour observations de raies spectrales.

The Canadian Time Allocation Group (C-TAG) is currently chaired by Dr. P.A. Feldman (HIA). For Semester 96A, other C-TAG members are Dr. W.H. McCutcheon (UBC/Vancouver), Dr. T.I. Hasegawa (St.Mary's/Halifax), Dr. L.A. Higgs (DRAO/Penticton), and Dr. D. Puche (M3i Systems/Montreal). The C-TAG technical secretary is Dr. J.P. Vallée (HIA).

Le Group d'Allocation de Temps Canadien (GAT-C) est présentement sous la présidence de Dr. P.A. Feldman (IHA). Pour le semestre 96A, les autres membres du GAT-C sont Dr. W.H. McCutcheon (UBC/Vancouver), Dr. T.I. Hasegawa (St.Mary's/Halifax), Dr. L.A. Higgs (DRAO/Penticton), et Dr. D. Puche (M3i Systems/Montréal). Le secrétaire technique du GAT-C est Dr. J.P. Vallée (IHA).

Each JCMT proposal from Canada is sent to two scientific referees, as well as to one technical referee (at the Joint Astronomy Centre in Hilo). Using this information, the proposals are assessed and graded by the C-TAG. We are pleased to report that for the 3rd semester in a row all referees replied.

Chaque demande de temps canadienne au TJCM est envoyée à deux arbitres scientifiques, et aussi à un arbitre technique (au Joint Astronomy Centre à Hilo). Avec l'information ainsi recueillie, ces demandes de temps sont évaluées et gradées par le GAT-C. Nous sommes fiers de noter que pour le 3e semestre consécutif, tous les arbitres ont répondu.

For the period from 1 Feb.'96 to 31 July'96, the overall time budget is as follows. There are 182 days, and the JCMT operates at a rate of 2 shifts per day (1 shift = 8 hours). Thus we start with 364 shifts, and subtract 90 shifts for the

Pour la période du 1 fév.'96 au 31 juillet'96, le

telescope's Engineering and Commissioning Time, giving 274 shifts left. Now 10% of that amount (=27 shifts) goes to the University of Hawaii, leaving 247 shifts. We then subtract 8 shifts for the JCMT Director's Discretionary Time, leaving 239 shifts. I-TAC (see below) allocated 9 shifts for purely international proposals, leaving 230 shifts to allocate by the partner countries as per the agreed financing formula. Thus of these 230 shifts, Canada gets 25%, i.e., 57.5 shifts to be allocated by C-TAG (see below).

**\* Notes from the C-TAG Chair (Dr. P.A. Feldman)**

Results for Semester 96A of the Canadian Time Allocation Group (C-TAG) meeting in Ottawa (25-26 Nov.1995) and of the International Time Allocation Committee (I-TAC) meeting in Stratford-upon-Avon (6-7 Dec.1995) follow below.

Allocations by the UK and Netherlands National TAGs and by the I-TAC (for purely international proposals) can be found on the home pages of the JCMT and of PPARC.

In this semester I-TAC must contend with the requirements of scheduling the commissioning of 3 new instruments (4, if one counts the new FTS). Therefore, some of the allocations made above have been designated as low-frequency backups for Rx W and SCUBA commissioning. The PIs who may be affected in this way will receive this information as part of their feedback letters. Also, C-TAG has made provisional allocations for the Canadian share of "fallback" time for Rx B3, the FTS, Rx W, and SCUBA in case any of these new instruments should not arrive or otherwise not be commissionable. Again, the PIs of the proposals which might be affected will be notified as part of their "feedback" letters. [Only one proposal thus affected was not given time in the regular allocation listed below.] Finally, applicants should appreciate that with the commissioning of so many instruments in a single semester, the awarding and scheduling of telescope time should be considered provisional until the instrument commissioning dates are made final.

budget de temps est comme suit. Il y a 182 jours, et le TJCM opère avec 2 tiers par jour (1 tiers = 8 heures). Ainsi en partant avec 364 tiers, on soustrait 90 tiers pour le Temps d'Ingénierie et de Commissionnement pour le télescope, laissant 274 tiers. On prend 10% de ce chiffre (=27 tiers) pour l'Université d'Hawaii, laissant 247 tiers. On soustrait 8 tiers pour le Temps Discretionnaire du Directeur du TJCM, laissant 239 tiers. Puis I-TAC (voir ci-bas) a donné 9 tiers pour les demandes de temps purement internationales, laissant 230 tiers à allouer par les pays partenaires du TJCM suivant la formule de financement conjointe. Ainsi de ces 230 tiers, le Canada en récolte 25%, i.e. 57.5 tiers sont à allouer par le GAT-C (voir ci-bas).

**\* Notes du président du GAT-C (Dr. P.A. Feldman)**

Les résultats pour le semestre 96A à la rencontre du GAT-C à Ottawa (25-26 Nov.'95) et de la rencontre du International Time Allocation Committee (I-TAC) à Stratford-upon-Avon (6-7 Dec'95) suivent ci-après.

Les temps d'observations alloués par les Groupes nationaux de la Hollande et du Royaume Uni et par le I-TAC pour les demandes purement internationales peuvent être trouvés sur les pages de l'inforoute du TJCM et de PPARC.

Dans ce semestre, I-TAC doit tenir compte des contraintes en cédulant 3 nouveaux instruments (4, si on compte le nouveau FTS). Alors plusieurs des allocations faites ci-haut ont été désignées comme supports basse-fréquence pour le récepteur W et pour le commissionnement de SCUBA. Les Principaux Investigateurs pouvant être affectés seront informés dans leurs lettres-réponses. De plus, des allocations provisionnelles ont été faites par le GAT-C au cas où les nouveaux récepteurs B3, FTS, W, et SCUBA n'arrivent pas à Hawaii ou ne sont pas commissionnées. Les Principaux Investigateurs pouvant être affectés seront informés dans leurs lettres-réponses. [Seulement une demande de temps ainsi affectée n'a pas reçu de temps ci-après]. Enfin, les demandeurs apprécieront que, vue l'arrivée de plusieurs

**\* Notes for the upcoming Semester 96B (1 August'96 to 31 January'97)**

Dr. W.H. McCutcheon (UBC/Vancouver) will become the C-TAG Chair for Semester 96B.

Observing time proposals for Semester 96B are due for 31 March 1996 at: JCMT C-TAG, c/o Director General's Office, HIA, NRC, 100 Sussex Drive, Ottawa, Ont. K1A 0R6, Canada.

More information on writing Observing Time Proposals for C-TAG can be found at <http://www.hia.nrc.ca/JCMT/JCMT-homepage.html> and recent results can be read in the JCMT Newsletter.

nouveaux récepteurs dans ce semestre, toutes les allocations et cédules de temps doivent être considérées comme provisionnelles, jusqu'à ce que les dates de commissionnement soient finalisées.

**\* Notes pour le prochain semestre 96B (1 août'96 au 31 janvier'97)**

Dr. W.H. McCutcheon (UBC/Vancouver) deviendra président du GAT-C pour le semestre 96B.

Les demandes de temps pour le semestre 96B sont dues le 31 mars'96 à: GAT-C TJCM, a/s Bureau du Directeur Général, IHA, CNRC, 100 promenade Sussex, Ottawa, Ont. K1A 0R6, Canada.

On peut trouver plus d'info pour écrire une demande de temps au GAT-C en parcourant l'inforoute à <http://www.hia.nrc.ca/JCMT/JCMT-homepage.html> et on trouvera des résultats récents dans le JCMT Newsletter.

M/96A/ PI (Institution)	Number of Shifts Allocated (1 shift = 8 hours)
M/96A/ PI (Institution)	Nombre de tiers alloués (1 tiers = 8 heures)
C 1 Seaquist (U. of Toronto)	2
C 2 Vallée (HIA)	4
C 3 Avery (HIA/JACH)	1, serviced
C 4 MacLeod (HIA)	3
C 5 Davis (U. of Saskatchewan)	"2" (=3x6h) together with C24 and C18
C 6 Frayer (U. of Toronto)	1, serviced
C 8 Matthews (HIA/JACH)	3
C 9 Bastien (U. de Montréal)	4
C10 Duley (U. of Waterloo)	3
C12 Avery (HIA/JACH)	2
C15 Wilson (McMaster U.)	3
C16 C.Taylor (McMaster U.)	3
C17 Hasegawa (St.Mary's U.)	3
C18 Clark (U. of Calgary)	2 (=8x2h) together with C5 and C24
C19 Hasegawa (St.Mary's U.)	3
C20 Hasegawa (St.Mary's U.)	0, but low-frequency backup for C19
C21 Feldman (HIA)	1, serviced
C22 Fich (U. of Waterloo)	2
C23 Giannakopoulou (U. of Waterloo)	5.5
C24 Naylor (U. of Lethbridge)	"4" (=5x6h) together with C5 and C18
CANSERV	6
TOTAL= 57.5 shifts/tiers	

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The following is a list of preprints written by Canadian astronomers and received at the Astronomy library within the dates given above. The preprints are arranged in alphabetical order according to the surname of the first listed author. Originating institution and date of receipt at the library are given.

- Bennett, P.D., Brown, A., Linsky, J.L. *A NLTE analysis of the zeta Aurigae B-type secondary I. Determination of the fundamental stellar parameters.* Colorado 18-Oct-1995
- Bergeron, P., Wesemael, F., Beauchamp, A. *Photometric calibration of hydrogen- and helium-rich white dwarf models.* Obs. Mont Mégantic 11-Oct-1995
- Chaboyer, B., Demarque, P., Sarajedini, A. *Globular cluster ages and the formation of the galactic halo.* CITA 29-Sep-1995
- Chaboyer, B. *Halo star evolution.* CITA 29-Sep-1995
- Cote, P., et al *Dynamics of the galactic globular cluster NGC 3201.* DAO 13-Oct-1995
- Crampton, D., Lilly, S.J., et al. *The Canada-France Redshift Survey V: Global properties of the sample.* DDO/U of T 6-Nov-1995
- DRAO *Annual report October 1995.* 16-Nov-1995
- Drissen, L., et al *The dense galactic starburst NGC 3603. I. HST/FOS spectroscopy of individual stars in the core and the source of ionization and kinetic energy.* Obs. Mont Mégantic 15-Dec-1995
- Durrell, P.R., et al *Globular cluster systems in dwarf elliptical galaxies. I: The dE,N galaxy NGC 3115 DW1.* McMaster U 12-Dec-1995
- Le Fevre, O., Lilly, S.J., et al *The Canada-France Redshift Survey II: Spectroscopic program; data for the 0000-00 and 1000 + 25 fields.* DDO/U of T 6-Nov-1995
- Le Fevre, O., Lilly, S.J., Hudon, D., et al. *The Canada-France Redshift Survey VIII: Evolution of the clustering of galaxies from  $z \sim 1$ .* DDO/U of T 6-Nov-1995
- Freedman, W.L., Madore, B.F. *The cepheid extragalactic distance scale.* Obs. Carnegie Inst. 8-Nov-1995
- Golla, G., Allen, M.L., Kronberg, P.P. *The starburst nuclear region in M82 compared in several wavebands.* DDO/U of T 20-Nov-1995
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- Gray, D.F., et al *Variations of beta Comae through a magnetic minimum.* UWO 12-Oct-1995
- Hammer, F., Lilly, S.J., et al *The Canada-France Redshift Survey VII: Optical counterparts of microJansky radiosources.* DDO/U of T 6-Nov-1995

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- Kary, D.M., Dones, L. *Capture statistics of short-period comets: implications for comet D/Shoemaker-Levy 9.* U Cal/Santa Barbara 4-Oct-1995
- Knapen, J.H., et al *Molecular gas observations and enhanced massive star formation efficiencies in M100.* Obs. Mont Mégantic 11-Oct-1995
- Knapen, J.H., et al *Contributions to Barred Galaxies, IAU colloquium no. 157.* Obs. Mont Mégantic 11-Oct-1995
- Kofman, L., et al *Mixed dark matter in halos of clusters.* CITA 13-Oct-1995
- Kwok, S. *On the nature of symbiotic novae.* U Calgary 4-Dec-1995
- Kwok, S. *CO in planetary nebulae and proto-planetary nebulae.* U Calgary 4-Dec-1995
- Leahy, D.A., Roger, R.S. *Radio sources in fields centered near supernova remnant G160.9+2.6 (HB9).* DRAO 16-Nov-1995
- Leahy, D.A., Aschenbach, B. *ROSAT X-ray observations of the supernova remnant HB9.* U Calgary 28-Nov-1995
- Leahy, D.A., Roger, R.S. *Radio sources in fields centered near supernova remnant G160.9+2.6 (HB9).* U Calgary 28-Nov-1995
- Leahy, D.A. *Observations of spectral shape changes in Her X-1.* U Calgary 28-Nov-1995
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- Leahy, D.A., Yoshida, A. *Analysis of an eclipse ingress during a high state of Hercules X-1.* U Calgary 28-Nov-1995
- Lilly, S.J., et al *The Canada-France Redshift Survey III: "single emission line" objects, analysis of repeat observations and spectroscopic identifications in the 1415+52 and 2215+00 fields.* DDO/U of T 6-Nov-1995
- Lilly, S.J., et al *The Canada-France Redshift Survey I: Introduction to the survey, photometric catalogs and surface brightness selection effects.* DDO/U of T 6-Nov-1995
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- Rosas, M., Beckman, J.E., Knapen, J.H. *Statistics and properties of HII regions in a sample of grand design galaxies.* Obs. Mont Mégantic 11-Oct-1995



- Roy, J.-R., et al *The O/H distribution in the low mass galaxies NGC 2366 and NGC 4395*. U Laval 12-Oct-1995
- Roy, J.-R. *Abundance distributions in barred galaxies*. U Laval 12-Oct-1995
- Roy, J.-R. *Large scale transport and mixing in the interstellar medium of gas-rich galaxies*. U Laval 12-Oct-1995
- Sakai, S., Madore, B.F., Freedman, W.L. *Tip of the red giant branch distances to galaxies: III. The dwarf galaxy Sextans A*. Obs. Carnegie Inst. 8-Nov-1995
- Schade, D., Lilly, S.J., et al *The Canada-France Redshift Survey : HST imaging of high-redshift field galaxies*. DDO/U of T 6-Nov-1995
- Schade, D., Lilly, S.J., et al *The Canada-France Redshift Survey X: The quasar sample*. DDO/U of T 6-Nov-1995
- Schade, D., et al *Canada-France Redshift Survey XI: Morphology of high-redshift field galaxies from high-resolution ground-based imaging*. DDO/U of T 7-Dec-1995
- Sigut, T.A.A., Pradhan, A.K. *Electron impact excitation of Mg II: collision strengths and rate coefficients*. DDO/U of T 19-Sep-1995
- Sigut, T.A.A., Lester, J.B. *Infrared Rydberg emission lines in early-type stars I. Mg II*. DDO/U of T 17-Oct-1995
- Szapudi, I., Colombi, S. *Cosmic error and statistics of large scale structure*. CITA 19-Oct-1995
- Thornburg, J. *Finding apparent horizons in numerical relativity*. UBC 2-Oct-1995
- Turner, D.G. *The progenitors of classical cepheid variables*. St. Mary's U 27-Nov-1995
- Uppgren, A.R., Harlow, J.J.B. *Space motions of low-mass stars. II: Radial velocities*. Van Vleck Obs- DDO/U of T 16-Oct-1995
- van den Bergh, S. *A new method for the determination of the Hubble parameter*. DAO 13-Oct-1995
- van den Bergh, S. *Some constraints on galaxy evolution imposed by the specific frequency of globular clusters*. DAO 13-Oct-1995
- van den Bergh, S. *Are the luminosities of RR Lyrae stars affected by second parameter effects?*. DAO 13-Oct-1995
- West, M.J., et al *Intracluster globular clusters*. DAO 13-Oct-1995
- Willis, A.G., Higgs, L.A. *Correcting some DRAO Synthesis Telescope wide-field imaging problems*. DRAO 16-Nov-1995
- Yee, H.K.C., Bechtold, J. *Variability in the gravitational lens system B1422+231*. Steward/DDO/U of T 7-Dec-1995

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Space Astronomy	S. Rucinski, ISTS-SAL York U	<a href="mailto:rucinski@nereid.sal.ists.ca">rucinski@nereid.sal.ists.ca</a>
Theoretical Astrophysics	M. Marlborough, U.W.O	<a href="mailto:marlboro@uwo.ca">marlboro@uwo.ca</a>
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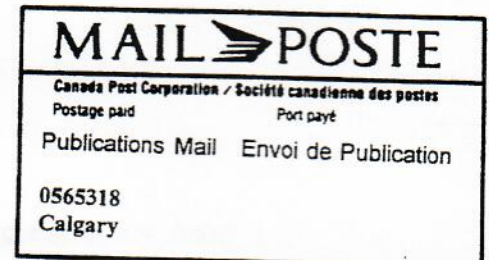
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Editor: Jack Penfold  
E-Mail: [jpenfold@mtroyal.ab.ca](mailto:jpenfold@mtroyal.ab.ca)  
Telephone: 403-240-6029  
FAX: 403-240-6505  
Web Master: Brad Wallace  
E-mail: [brad@ras.ucalgary.ca](mailto:brad@ras.ucalgary.ca)

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