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# CASSIOPEIA

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## CONTENTS

### ANNOUNCEMENTS

CASCA 1994	1
Meetings/Conferences/Workshops	2
A Canada-France-Hawaii Telescope Users' Workshop	2

### REPORTS

Information available on the Gemini 8-metre telescopes/ Renseignements disponibles sur les télescopes de 8m de Gemini	Andy Woodsworth	4
GEMINI Project Highlights		5
CASCA Travel Grants for FSU Astronomers	Lloyd Higgs	5
CASCA's New Moscow Connection		5
CITA Highlights		6
Canadian Astronomy Publications		7





CASSIOPEIA

**STARS: ... FROM THEIR SURFACES TO THE INTERSTELLAR MEDIUM.**

**Annual Meeting of the  
Canadian Astronomical Society**

**25**

**Congrès de la  
Société Canadienne d'Astronomie**

**LES ETOILES: ... DE LEUR SURFACE AU MILIEU INTERSTELLAIRE.**

**May 24 - 28 Mai**

**The Department of Astronomy  
The University of Western Ontario  
London, Ontario**

**Le Département d'Astronomie  
L'Université de Western Ontario  
London, Ontario**

email: [casca@phobos.astro.uwo.ca](mailto:casca@phobos.astro.uwo.ca)

**Important Dates**

- April 22 - Last Day for:-  
Registration at reduced rates  
Receipt of Abstracts: [dfgray@uwo.ca](mailto:dfgray@uwo.ca)  
Guaranteed Residence Accommodation
- May 24, Tuesday  
CASCA Board Meeting  
Workshop - Astronomy on the Internet  
by Dennis Crabtree
- May 25, Wednesday  
Beals Lecture - Peter Martin  
Special Interest Meetings
- May 26, Thursday  
Annual General Meeting  
Banquet - President's address: Canadian Radio  
Astronomy at the Cross-Roads
- May 27, Friday  
Visit to Elginfield Observatory
- May 28, Saturday  
Plaskett Lecture  
Education Sessions

**Dates Importantes**

- 22 Avril - Cloture pour:-  
Inscriptions à prix réduit  
remise de résumés: [dfgray@uwo.ca](mailto:dfgray@uwo.ca)  
Réservations aux résidences de l'université
- 24 Mai, Mardi  
Réunion du conseil de la CASCA  
Invité Spécial - L'Astronomie et le Réseau Internet  
par Dennis Crabtree
- 25 Mai, Mercredi  
Exposé "Beals" - Peter Martin  
Réunions d'intérêts particulier
- 26 Mai, Jeudi  
Assemblée Générale Annuelle  
Banquet - Adresse du président: La  
radioastronomie canadienne à son heure de  
décision
- 27 Mai, Vendredi  
Visite de l'observatoire d'Elginfield
- 28 Mai, Samedi  
Exposé "Prix Plaskett"  
L'enseignement de l'astronomie



**ORGANIZATION:**

This workshop is organized and sponsored by the CFHT Scientific Advisory Committee (SAC). The Scientific Organizing Committee is composed of:

R. Arsenault (CFH)	R. McClure (Canada)
F. Rigaut (France & CFH)	M. Northcott (Univ. of Hawaii)
J. Bouvier (France, SAC member)	G. Joncas (Local Organizer, Canada, SAC member)
R. Racine (Canada)	

**SPEAKERS:**

CFHT AO Bonnette Overview (F. Rigaut, R. Arsenault)  
 The UH AO System (M. Northcott)  
 Observing with COME-ON+ (J.-L. Beuzit)  
 The OASIS Integral Field Spectrograph (R. Bacon)  
 Photometry with Variable PSF (P. Stetson)  
 Science Results with other AO Systems (P. Lena)  
 Solar System Studies with AO (P. Drossart)  
 Images and Science with the Refurbished HST (M. Shara)  
 Young Stellar Object with AO (J. Bouvier)  
 Globular Cluster Studies with AO (R. Racine)  
 Galaxy Structure Studies with AO (G. Monnet)  
 Active Galactic Nuclei Studies with AO (M. de Robertis)  
 Extragalactic and Cosmology Studies with AO (S. Lilly)

A round table will conclude the presentations, and (hopefully) stimulate exchanges and discussions. The following astronomers will animate the session:

J. Caldwell (Solar/Planetary Systems),  
 H. Zinnecker (Star Formation),  
 G. Walker (Stellar/Instrumental),  
 D. Alloin (AGN)

**FOR FURTHER INFORMATION AND REGISTRATION CONTACT:**

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 E-mail: [arsen@cfht.hawaii.edu](mailto:arsen@cfht.hawaii.edu), [rigaut@cfht.hawaii.edu](mailto:rigaut@cfht.hawaii.edu)

## - REPORTS -

Information available on the Gemini  
8-metre telescopes

The Gemini Project publishes a Newsletter three or four times a year. This describes progress in all areas of the telescope, and is highly readable. It is distributed in Canada by the Gemini Canada Project Office. If you are not on the distribution list and would like to be, please contact us.

There are two other useful items which will be available around May. The Gemini Board has commissioned its Chairman, Malcolm Longair, to prepare a "glossy" illustrated booklet describing the project and the partners. This will contain about 16 pages, and it will be non-technical in content. It will appear in English and French, as well as in Spanish and Portuguese. Additionally, a number of technical papers describing all aspects of the Project were presented at the recent conference in Kona on "Astronomical Telescopes and Instrumentation for the 21st Century". These papers are available as a bound set. Please contact us if you would like either of these items.

Opportunity for participation in Gemini  
Instrumentation

Although the final Instrumentation Plan has yet to be approved by the Gemini Board, we expect that Canada will play a role in the construction of an imaging spectrograph, in addition to the Adaptive Optics system. We canvassed the Canadian astronomical community two years ago for expressions of interest in building Gemini instrumentation. Please let us know if you can contribute in any way to either of these projects.

Tim Davidge	(604)-363-0047
<i>davidge@dao.nrc.ca</i>	
Gordon Walker	(604)-822-4133
<i>walker@astro.ubc.ca</i>	
Andy Woodsworth	(604)-363-0024
<i>woodsworth@dao.nrc.ca</i>	

Renseignements disponibles sur les  
télescopes de 8m de Gemini

Le projet Gemini publie une circulaire trois ou quatre fois par an. Elle décrit les progrès accomplis sur toutes les facettes du télescope et sa lecture est facilement accessible. Cette circulaire est distribuée au Canada par le bureau canadien du projet Gemini. Si vous n'êtes pas sur la liste des abonnés et voudriez le devenir, contactez-nous simplement.

Deux autres sources d'information seront accessibles vers le mois de mai. Le bureau de direction de Gemini a demandé à son président, Malcolm Longair, de préparer un livret illustré sur papier glacé décrivant le projet et les partenaires. Le contenu de ce livret de seize pages environ sera non-technique. Il paraîtra en anglais et français, ainsi qu'en espagnol et portugais. En plus de ce livret, un certain nombre d'articles techniques décrivant toutes les facettes du projet ont été récemment présentés à la conférence de Kona: "Astronomical Telescopes and Instrumentation for the 21st Century". Ces articles regroupés dans un fascicule sont disponibles. Si vous désirez obtenir l'une ou l'autre de ces sources d'information, veuillez bien nous contacter.

Opportunité de participation dans  
l'instrumentation de Gemini

Bien que le plan final d'instrumentation doive encore être approuvé par le bureau de direction, nous projetons que le Canada joue un rôle dans la construction d'un spectrographe imageur en plus du système d'optique adaptative. Il y a deux ans, nous avons sondé la communauté des astronomes canadiens pour connaître leur intérêt quant à la fabrication des instruments de Gemini. Seriez-vous assez aimable pour nous faire connaître si vous pouvez contribuer en quoi que ce soit à l'un de ces projets.

## HIGHLIGHTS FROM GEMINI PROJECT NEWSLETTER, 1994 JANUARY

1. Chile, Argentina, and Brazil signed Memoranda of Understanding indicating their intention to join the project, thereby providing the final 10% of the required funding.
2. A contract for polishing of the primary mirrors has been negotiated. The schedule for this contract is consistent with the overall schedule, which has first light on Mauna Kea in 1998 and on Cerro Pachon in 2000.
3. The so-called prime site on Cerro Pachon has been chosen as the southern site.
4. It is hoped that ground will be broken for one - and possibly both - telescopes during this calendar year.
5. Richard Kurz assumed the position of Project Manager for the Gemini Project at the beginning of January.

### CASCA Travel Grants for FSU Astronomers

Over the last few months, considerable dialog has taken place between the CASCA Committee for the Support of FSU Astronomy and the Soviet Astronomical Society (now known as the Euro-Asian Astronomical Society) regarding the proposed program of small travel grants to astronomers in the countries of the former Soviet Union (FSU). The CASCA proposal has been accepted and an official agreement will probably be signed in the next month or so. The terms of the agreement are essentially those outlined in the 1993 Autumnal Equinox issue of Cassiopeia. In anticipation that Revenue Canada will accept this as a charitable program, the initial agreement will be between Cascatrust and the Euro-Asian Astronomical Society. Our committee, now renamed to be the CASCA FSU Travel Grant Committee, will assist Cascatrust in the operation of this program, and an EAAS Advisory Committee will solicit applications for the travel grants in the FSU and make recommendations regarding recipients. This committee will consist of:

### CASCA's New Moscow Connection

The American Astronomical Society's Chretien International Research Grant is given each year to one or more individuals or groups in support of international collaboration in observational astronomy. The 1993 award of \$22,000 US was granted to Dr. Denise C. Gabuzda of the University of Calgary for her proposal to conduct Very Long Baseline Interferometry research at the Lebedev Physical Institute in Moscow for a period of 2-3 years. Moscow is the technical centre for the *Radioastron* Space VLBI project, which will obtain centimetre wavelength VLBI images of unprecedented high resolution ( $\sim 50\mu\text{arcsecond}$ ) by observing with a VLBI array in which one of the radio telescopes is in orbit around the earth. Gabuzda will primarily be making and analyzing ground-based polarization-sensitive VLBI observations with the help of Russian students, but will also be doing work in preparation for the launch of the *Radioastron* satellite. She is planning on heading across the Atlantic at the end of April, and expects to make trips back to Canada once or twice each year during the course of her stay in Russia. While in Moscow, she will remain

Prof. Nikolai G. Bochkarev, Sternberg  
Astronomical Institute, Moscow

Prof. Vitalij G. Gorbatskij, St. Petersburg State  
University

Prof. Vladimir N. Obridko, Institute of Terrestrial  
Magnetism and Radio-Wave Propagation, Troitsk

Dr. Vladimir G. Surdin, Sternberg Astronomical  
Institute, Moscow

Dr. Izold B. Pustilnik, Institute of Astrophysics and  
Atmospheric Physics, Academy of Sciences of  
Estonia, Teravere, Estonia

Some thirty CASCA members responded to our  
appeal last year and contributed about \$1850 to  
the fund. We plan to launch another appeal at  
the 1994 CASCA Meeting in London, with the  
target of raising the fund to somewhere in the  
\$5000 to \$8000 range. We, and our FSU  
colleagues, look forward to your support of this  
program.

Lloyd Higgs, Chair  
CASCA FSU Travel Grant Committee

an employee of the University of Calgary, as a  
research associate working with Russ Taylor.

Gabuzda is enthusiastic about the prospect  
of taking the still young field of polarization VLBI  
to Moscow. Russian astronomy has tended to be  
stronger in theoretical than in observational work,  
and she hopes to help decrease this imbalance by  
providing young Russian astronomers training in  
forefront observational techniques. In turn, she  
hopes that her VLBI research will benefit through  
interactions with theoretical colleagues at the  
Lebedev Institute. To Canadian colleagues at  
home, her 2-3 year stay in Moscow offers a  
potentially very useful means of keeping in touch  
with changing economic and political conditions in  
Russia, and with the atmosphere in which scientific  
research is being undertaken there. We plan to  
provide such information to the Canadian  
astronomical community via regular contributions to  
**CASSIOPEIA** from our new "Moscow  
Correspondent".

#### HIGHLIGHTS FROM CITA WINTER NEWSLETTER

**AWARDS.** Nick Kaiser - 1993 Herzberg Medal of the CAP.  
Peter Martin - 1994 Carlyle S. Beals Award of the CAS.  
Werner Israel - Officer of the Order of Canada.

**COMPUTING.** A consortium of seven astrophysical theorists from across Canada has applied to NSERC for a major equipment grant to purchase a multiprocessor UNIX machine to be located in Toronto and managed by CITA's system manager. Shareholders (Dare we call them "The Group of Seven"? Ed.) would pay operating and maintenance from research grants. The machine is intended primarily as a number cruncher. If you are interested in joining this initiative as a participant either after a successful application or as part of an enlarged group re-applying, please contact [tremaine@cita.utoronto.ca](mailto:tremaine@cita.utoronto.ca)

**CONFERENCES/MEETINGS.** CITA is always receptive to requests for support for meetings, symposia and workshops. CITA's program has neither the intent nor the resources to replace major sources of funding such as NSERC, NATO, IAU. The CITA support can typically be used for costs such as travel expenses for graduate students. The main objective is to promote interaction, collaboration, and exchange of scientific results within and between the Canadian astrophysics/astronomy community and its international counterparts.  
CITA typically supports 3 - 4 meetings a year from a total budget of \$8k.

Requests for support of meetings, applications for Reinhardt Fellowships and other matters to be brought before the CITA Council should be submitted to Scott Tremaine at CITA ([tremaine@cita.utoronto.ca](mailto:tremaine@cita.utoronto.ca))



**CANADIAN ASTRONOMY PUBLICATIONS**  
**December 10, 1993 to March 11, 1994**

If you have a preprint or other Canadian publication, we would like to include it in this list. Please send a copy (or a photocopy of the title page) to:

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

**A. PREPRINTS OF RESEARCH PAPERS**

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.

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- Dominion Radio Astrophysical Observatory National Research Council of Canada. Annual Report October 1993.* DRAO. 3-Feb-1994
- Abraham, R.G.; et al. *The morphologies of distant galaxies: I. An automated classification system.* DAO. 25-Jan-1994
- Beauchamp, A.; Moffat, A.F.J.; Drissen, L. *The galactic open cluster NGC 7419 and its five red supergiants.* Obs. Mont Megantic. 8-Feb-1994
- Boeshaar, P.C.; Davidge, T.J. *The spectroscopic properties of M dwarfs in the two micron region.* DAO. 25-Jan-1994
- Bond, J.R. *CMB broad-band power spectrum estimation.* CITA. 9-Mar-1994
- Bond, J.R.; Davis, R.L.; Steinhardt, P.J. *How well can cosmological parameters be estimated from CMB observations?* CITA. 9-Mar-1994
- Carlberg, R.G.; Yee, H.K.C.; Ellingson, E. *Lensing from the light-traces-mass map of MS1224+20.* DDO/U of T. 17-Feb-1994
- Carlberg, R.G.; Pritchet, C.J.; Infante, L. *A survey of faint galaxy pairs.* DDO/U of T. 2-Feb-1994
- Cherepashchuk, A.M.; Moffat, A.F.J. *Cygnus X-3 as a benchmark for fundamental properties of Wolf-Rayet stars.* Obs. Mont Megantic. 8-Feb-1994
- Davidge, T.J.; Clark, C.C. *Absorption line gradients in the blue and near-ultraviolet spectra of bright elliptical galaxies, and implications for studies of intermediate redshift objects.* DAO. 25-Jan-1994
- Doyon, R.; et al. *Near-infrared imaging and spectroscopy of the bright IRAS galaxy W114.* Obs. Mont Megantic. 8-Feb-1994
- Ellingson, E.; Yee, H.K.C.; et al. *Metal-line absorption at Zabs ~ Zem from associated galaxies.* DDO/U of T. 17-Feb-1994
- Evans, N.R.; Udalski, A. *Resolved companions of classical cepheids.* ISTS York U. 2-Feb-1994
- Evans, N.R.; Lyons, R.W. *The binary system containing the classical cepheid T Mon.* ISTS York U. 2-Feb-1994
- Garrison, R.F. *A hierarchy of standards for the MK Process.* DDO/U of T. 14-Feb-1994
- Gray, D.F. *Stellar magnetic-cycle phasing.* UWO. 9-Mar-1994
- Gray, D.F.; Baliunas, S.L. *The activity cycle of tau Ceti.* UWO. 17-Dec-1993
- Grossman, S.A.; Nowak, M.A. *The statistics of gamma-ray burst lensing.* CITA. 18-Feb-1994

- Grossman, S.A.; Saha, P. *Arc statistics and constraints on cluster lenses*. CITA. 18-Feb-1994
- Higgs, L.A.; Wendker, H.J.; Landecker, T.L. *G79.29+0.46: a young stellar wind shell in Cygnus X*. DRAO. 3-Feb-1994
- Irwin, J.A. *Arcs and bridges in the interacting galaxies, NGC 5775/NGC5774*. Queen's. 4-Feb-1994
- Iverson, R.J.; Seaquist, E.R.; Hall, P.J. *Discovery of OH and H<sub>2</sub>O masers in R Aquarii and H1-36 Aae*. DDO/U of T. 24-Feb-1994
- Iverson, R.J.; Seaquist, E.R. *The latest spectral peregrinations of RX Puppis*. DDO/U of T. 18-Jan-1994
- Kemper, K.W.; Bagnuolo, W.G.; Chew, S. *Passive interspectroscopy II: observational tests*. DDO/U of T. 11-Mar-1994
- Kim, K.-T.; et al. *Radio observations of the Coma cluster of galaxies and its immediate vicinity: I. Radio data and optical identifications*. DRAO. 24-Feb-1994
- Kim, K.-T. *Radio observations of the Coma cluster of galaxies and its immediate vicinity: II. A master list of radio sources*. DRAO. 24-Feb-1994
- Kim, K.-T.; et al. *Radio observations of the Coma cluster of galaxies and its immediate vicinity: III. Statistical analyses and source counts*. DRAO. 24-Feb-1994
- Li, J.G.; Seaquist, E.R. *Neutral hydrogen distribution in the NGC 7465 group of galaxies*. DDO/U of T. 18-Feb-1994
- Moriarty-Schieven, G.H.; et al. *Circum-protostellar environments II. Envelopes, activity, and evolution*. DRAO. 2-Mar-1994
- Morris, S.L.; van den Bergh, S. *Lyman alpha absorption and tidal debris*. DAO. 25-Jan-1994
- Murakami, I.; Ikeuchi, S. *Evolution of Lyman alpha clouds at low redshifts*. CITA. 12-Jan-1994
- Nadeau, D.; et al. *The Montreal near-infrared camera*. Obs. Mont Megantic. 8-Feb-1994
- Nowak, M.A.; Grossman, S.A. *Can we identify lensed gamma ray bursts?* CITA. 18-Feb-1994
- Rice, J.B.; Wehlauf, W.H. *Doppler imaging of the Ap star 17 Comae Berenices*. Brandon U. 1-Mar-1994
- Seaquist, E.R.; Iverson, R.J. *A search for symbiotic behaviour amongst OH/IR colour mimics*. DDO/U of T. 24-Feb-1994
- Seaquist, E.R.; Kerton, C.R.; Bell, M.B. *Millimeter recombination lines and the state of ionized gas in M82*. DDO/U of T. 2-Feb-1994
- Smecker-Hane, T.A.; Stetson, P.B.; Hesser, J.E. *The stellar populations of the Carina dwarf spheroidal galaxy: a new color-magnitude diagram for the giant and horizontal branches*. DAO. 25-Jan-1994
- Starkman, G.D.; Kaiser, N.; Malaney, R.A. *Mixed dark matter from neutrino lasing*. CITA. 12-Jan-1994
- Stetson, P.B. *The center of the core-cusp globular cluster M15: CFHT and HST observations*. DAO. 25-Jan-1994
- Stetson, P.B. *DAOPHOT reductions of the simulated cluster field*. DAO. 25-Jan-1994
- Stetson, P.B. *Reduction of WFC images with DAOPHOT III*. DAO. 25-Jan-1994
- Tapping, K.F.; Harvey, K.L. *Slowly-varying microwave emissions from the solar corona*. DRAO. 2-Mar-1994
- van den Bergh, S. *The evolutionary history of low-luminosity local group dwarf galaxies*. DAO. 25-Jan-1994
- van den Bergh, S. *The outer fringes of the local group*. DAO. 25-Jan-1994
- Walker, G.A.H.; et al. *Direct imaging of faint stellar companions*. Obs. Mont Megantic. 8-Feb-1994
- Wallace, B.J.; Landecker, T.L.; Taylor, A.R. *HI voids around filled-center supernova remnants*. DRAO. 2-Mar-1994

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## CASCA BOARD OF DIRECTORS

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DEADLINES FOR THE SUMMER SOLSTICE ISSUE:  
E-MAIL: JUNE 21                      OTHER: JUN 14



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