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C A S C A T R U S T

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HELEN SAWYER HOGG, 1905–1993

Canada has lost one of its most famous and best-loved astronomers with the death of Professor Helen B. Sawyer Hogg in Richmond Hill, Ontario on January 28, 1993. She was the founding president of our Society when it formed in 1971.

Helen Sawyer Hogg was born in Lowell, Massachusetts on August 1, 1905 and received her early education in Lowell public schools. Her university career began in 1922 with undergraduate studies at Mount Holyoke College. At the beginning of her time there she planned to become a chemist. However, an event in the winter of 1925 made her change her mind. There was a total eclipse of the sun on January 24, 1925 and her astronomy professor, Miss Anne Young, arranged for a special train to take the students to a site in Connecticut to view the eclipse from inside the path of totality. Years later, Helen said that "the glory of the spectacle seems to have tied me to astronomy for life, despite my horribly cold feet as we stood almost knee deep in the snow". A year later, in January 1926, Miss Annie J. Cannon of the Harvard College Observatory visited Mount Holyoke for a few days and Helen had an opportunity to meet with her several times. After their meeting it was arranged that Helen would go to Harvard to work with Dr. Shapley for graduate studies. She received an A.B. (*Magna cum Laude*) from Mount Holyoke in the spring of 1926 and started her work at Harvard a few months later. Helen was the first student that Shapley supervised for a doctorate on the subject of star clusters, the field in which he had made his name. She worked closely with Shapley dur-

ing her years at Harvard and had her name on a dozen papers before she submitted her doctoral thesis. She received an A.M. in 1928 and Ph.D. in 1931, both from Radcliffe College, because at that time Harvard did not give graduate degrees in science to women.

In 1930 she married fellow student, Frank Hogg, and after her graduation in 1931 they moved to Victoria, British Columbia, where Frank was appointed to the staff of the Dominion Astrophysical Observatory. In Victoria, as an unpaid volunteer, Helen started her own observing program with the 72-inch telescope to search for and study variable stars in globular clusters. In those days it was not considered proper for a woman to spend nights in the dome alone with male technicians, but since her husband was willing to chaperone her, she was able to do her observing. While the Hoggs were in Victoria their first child, Sally, was born. When barely a month old even baby Sally participated in the family "globular cluster enterprise" by accompanying her parents to the dome at night in her basket.

In 1935 the family moved to Ontario, where Frank joined the staff of the University of Toronto. Helen continued her observing program with the 74-inch telescope at the university's David Dunlap Observatory, and received her first appointment from the University of Toronto in 1936 as a Research Assistant. The Hoggs' other two children, David and James, were born in 1936 and 1937 after the move to Ontario. Having three young children did not slow Helen down in her professional activities. She continued with her observing and publishing and in 1938 attended the IAU Gen-

eral Assembly in Stockholm when the 250 delegates at the meeting were invited to the Royal Palace by the King of Sweden. In 1939 she travelled to the Steward Observatory in Arizona for a six-week observing run to photograph globular clusters that were too far south to be observed from the Dunlap Observatory in Richmond Hill. She also went that same year to Texas for the opening of the McDonald Observatory. In 1940–41 she was the acting chairman of the astronomy department at Mount Holyoke. Her teaching duties at the University of Toronto started in 1941 during the second world war. Recently reminiscing about those days, Helen said, "The war years at the David Dunlap Observatory were very hard. Dr. John Heard and Dr. Peter Millman enlisted in the Royal Canadian Air Force; Gerry Longworth enlisted in the Royal Canadian Navy; George Tidy, an assistant, ended up as a prisoner in a Japanese Prisoner of War Camp. Left behind were Dr. R. K. Young, Dr. Frank Hogg, with a heart ailment, [Helen] and Ruth Northcott, who ran the 74-inch telescope nights and taught classes at the St. George campus of the University of Toronto by day. Hard years." In 1946 after the war, Frank Hogg became the Director of the Observatory, a post he held until his sudden death in 1951. This was a difficult time for Helen, but she kept on with her work and rose through the academic ranks at the University of Toronto to become a Full Professor in 1957. In 1976, she was appointed Professor Emeritus. In 1985, Helen married F. E. L. Priestley, Professor Emeritus of English at the University of Toronto. Professor Priestley died in 1988. However, during the brief time that he was married to Helen he also made a contribution to Canadian astronomy. He had two articles published in the *Journal of the Royal Astronomical Society of Canada* in 1986 and 1987: *Halley Greets Newton's Principia* and *Newton and the Apple*.

In the international astronomical community, Helen was very well known for her research on variable stars in globular clusters. She took over 2000 photographs and published more than 200 papers. I remember that her knowledge of the night sky was phenomenal. One cloudy night many years ago at the Dunlap Observatory, I was present when she spotted a break in the clouds and said that she might manage to photograph the cluster NGC 6934 in the gap. She was right! Her *Catalogues on Variable Stars in Globular Clusters* are valuable reference sources that are frequently cited in the literature. She published three editions: in 1939, 1955, and 1973, and was working on the fourth at the time of her death. An IAU Colloquium was held in honour of her life work in this field at the University of Toronto in 1972.

Over the years, she also wrote a number of articles on historical astronomy in the *Journal of the Royal Astronomical Society of Canada*, most of them in her feature *Out of Old Books*. However, to most Canadians,

she was probably best known for her work in public education. For thirty years (1951 to 1981), she wrote a weekly column entitled *With the Stars* for the *Toronto Star*. In 1970, she presented her own astronomy series on TV Ontario, and in 1976 her popular book on astronomy, *The Stars Belong to Everyone*, was published by Doubleday Canada.

Professor Hogg was active in several professional organizations in addition to the Canadian Astronomical Society. On a leave of absence from Toronto in 1955–1956, she became Program Director for Astronomy, National Science Foundation, Washington, D. C. She was President of the American Association of Variable Star Observers (1939–1941), International Astronomical Union Subcommittee: Variable Stars in Star Clusters (1955–1961), Royal Astronomical Society of Canada (1957–1959), Physical Science Section of the Royal Society of Canada (1960–1961), Royal Canadian Institute (1964), and councillor of the American Astronomical Society (1965–1968). In 1968, she was one of the first two women appointed as directors of the Bell Telephone Company of Canada and was re-elected as a director at every annual meeting until her retirement from the Board in 1978.

Throughout her distinguished career she received numerous awards and honours. In 1950, she won the Annie J. Cannon prize of the American Astronomical Society. In 1967, she received the Rittenhouse Medal of the Rittenhouse Astronomical Society, Philadelphia, the Service Award Medal of the Royal Astronomical Society of Canada, the Radcliffe Graduate Achievement Medal, and the Centennial Medal of Canada. In 1968, she was awarded the Medal of Service of the Order of Canada and in 1976 was promoted to Companion of the Order. In 1983, she received the Dorothea Klumpke-Roberts award from the Astronomical Society of the Pacific for her work in public education. She received the Order of Merit, City of Toronto in 1985 and the Sandford Fleming Medal of the Royal Canadian Institute that same year. In 1992, a few months before her death, the Commemorative Medal for the 125th Anniversary of the Confederation of Canada was conferred upon her. In addition, there were honorary degrees from Mount Holyoke in 1958, University of Waterloo in 1962, McMaster University in 1976, University of Toronto in 1977, Saint Mary's University in 1981, and the University of Lethbridge in 1985. She was honorary president of the Toronto Centre of the Royal Astronomical Society of Canada from 1972 to 1977, and national honorary president from 1977 to 1981. She held honorary life memberships in the Ontario Field Naturalists, the Royal Canadian Institute, the University Women's Club of Toronto, the Royal Astronomical Society of Canada, and Science North, Sudbury. Two telescopes were dedicated to her: one at the National Museum of Science and Technology in Ottawa, and the other at the University of Toronto Southern Observa-

tory in Chile. Asteroid 2917 was renamed Sawyer Hogg in her honour in 1984.

Professor Hogg was an important role model for women in the Physical Sciences. Throughout her life she encouraged women to pursue careers in science. In fact, only a few days before her death she participated in the taping of a video sponsored by the University of Toronto to attract young women into the sciences.

Although Helen Hogg's professional accomplishments are numerous, one can not write an account of her life without mentioning what a gracious and thoughtful person she was. For decades she invited astronomy staff and students to her home for dinners and teas, and on winter days there was always a fire burning in the fireplace. Even as recently as last August when her health was failing, she invited the staff of the Observatory to her home on the occasion of her 87th birthday. I remember many occasions when she brought her

freshly baked hermits to functions at the Observatory or to RASC meetings. She was also an expert knitter and made well constructed baby booties for generations of friends, relatives and associates. I know of no baby who could kick off those booties!

Throughout her life she was devoted to her family. She had three children, seven grandchildren, and four great grandchildren. Her son, David, is a radio astronomer at the National Radio Astronomy Observatory, Charlottesville, Virginia, and is a member of our Society.

Although Canadian science has suffered a great loss from the death of Professor Helen Sawyer Hogg, she will be remembered for many things in the years to come, not least through the Helen Sawyer Hogg lectureship that was established in her honour by the Canadian Astronomical Society and the Royal Astronomical Society of Canada in 1985.

CHRISTINE CLEMENT

MEMBERSHIP DIRECTORY

The Membership Directory is now available via anonymous ftp at stan.brandonu.ca (142.13.16.7). It is located in the directory [anonymous.gulliver] in the form of two PostScript print files DIRECPT1.PST and DIRECPT2.PST which can be printed on any PostScript printer. These files include the information from pages 1 - 20 of the Directory and the membership addresses of pages 21 - 36, respectively. The files are updated regularly as address changes are submitted by members. The date of the last update can be obtained using the DIR command (or other equivalent).

Membership Directories were mailed to all members in late January. If you encounter any errors or omissions in your entry in the Directory, please notify me via electronic mail or regular mail at the address below. It would be especially useful if members could check their institutional addresses which appear on pages 10 - 17.

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CASCA ANNUAL MEETING, JUNE 1-5 1993 AT UNIVERSITY OF VICTORIA

The registration package for 24th Annual Meeting of the Canadian Astronomical Society was mailed to all members on March 3. If you did not receive your copy, please inform us by phone at 604-363-0008. The registration brochure can also be obtained as a compressed Postscript file which you can retrieve via anonymous ftp from haida.dao.nrc.ca (134.87.150.9) in the file 'pub/casca/mailling.ps.Z'.

PLEASE NOTE the important deadlines for graduate student travel grants (April 1), for early registration rates (April 15), and for abstract submission and guaranteed accommodation (April 30). For the first time, we are offering - and encouraging! - electronic submission of abstracts using a variant of the successful AAS procedures. Instructions and the necessary templates are available in the directory 'pub/casca/abstracts' at the above computer address.

Your assistance in making any non-members in your institution and elsewhere aware of the rich variety of scientific, educational and public outreach components to the meeting program is truly appreciated.

We look forward to seeing you in Victoria on June 1st!

Chris Aikman, Dennis Crabtree, Jim Hesser, Chris Pritchett

CONGRÈS ANNUEL DE CASCA, 1-5 JUIN 1993 À LA UNIVERSITÉ DE VICTORIA

Nous avons envoyé le 3 mars aux membres l'annonce officielle de la 24^e rencontre annuelle de la Société canadienne d'astronomie. Si vous n'avez pas reçu votre copie, s.v.p. téléphonez-nous au 604-363-0008. Le document est également disponible via 'anonymous ftp' sur haida.dao.nrc.ca (134.87.150.9). Le fichier à récupérer est en format Postscript comprimé, et est situé dans le répertoire suivant: 'pub/casca/mailling_fr.ps.Z'.

VEUILLEZ NOTER que les dates limites sont le 1 avril pour les demandes de subvention de voyage pour les étudiants, le 15 avril pour l'inscription à prix réduit, et le 30 avril pour les résumés scientifiques et les demandes d'hébergement. Pour la première fois, nous offrons et encourageons la soumission de vos résumés par courrier électronique en utilisant une variante du système utilisé par le AAS. Les instructions nécessaires, en plus des templates nécessaires, peuvent se récupérer sur haida.dao.nrc.ca sous 'pub/casca/abstracts/*'.

Votre aide est requise afin de publiciser aux non-membres de votre institution la richesse scientifique et éducationnel du programme de cette rencontre.

Nous espérons vous voir tous à Victoria ce premier juin!

Chris Aikman, Dennis Crabtree, Jim Hesser, Chris Pritchett

CADC News

We are pleased to announce that STARCAT/Preview is now available for general use (SPARC machines only). STARCAT is the user interface for accessing the HST observation catalog and for requesting HST data. While STARCAT has been available previously by logging into the CADC machine, the new release runs in a client/server mode. This means that users will run the software locally and all database connections are made transparently over the network to the CADC. This new release of STARCAT also includes the newly implemented *preview* capability which was demonstrated at the CASCA meeting in Halifax. In order to use this new *preview* capability you must be running X-Windows. Preview allows the user to preview the spectrum or image associated with a particular catalog entry. Currently, one can Preview IUE Low Resolution Spectra, public GHRS, FOS and FOC data. We are also planning to include Preview images for WF/PC and FOC data and these should be available in May. STARCAT/Preview is available via anonymous ftp from cadc.dao.nrc.ca (134.87.150.40) in the file pub/software/starcat/starcat.tar.Z. The installation instructions are available in README in the same directory.

STARCAT also includes access to over 50 astronomical catalogs including the IRAS FSC, the HST GSC etc. These catalogs can be easily searched using the STARCAT forms-based interface. A new tool which will be available in early 1993 will allow users to search any STARCAT catalog for a positional match with a list of coordinates. This X11 based tool, named XCAT, is a proto-type system and we welcome your comments and suggestions. XCAT will be available from the same anonymous ftp address listed above in the file pub/software/xcat/xcat.tar.Z with a README file containing installation instructions.

We are also providing a documentation system which runs under X-Windows. This application,

named xdoc, will allow you to connect to our documentation server and access the on-line help for Starcat, documentation on various astronomical catalogs and other material. This is available in the file pub/software/xdoc/xdoc.tar.Z with installation instructions in the README file.

If you are interested in following the observations which HST is making you may want to try our xhot software! The *hot* stands for Hubble Operational Timeline. This X application will allow you to see what object Hubble is currently observing, which instrument is being used etc. This is available in the file pub/software/xhot/xhot.tar.z with an associated README.

The CADC is now receiving a steady flow of data from the Space Telescope Science Institute. As of March 4 we have 79 optical disks, each of which contain 2 GB of data, and we are receiving approximately 3-4 optical disks each week. We have all 1990 data (not reprocessed), and most of the public 1991 (reprocessed) data and we expect to be caught up on all public data by sometime in May.

At the same as we are receiving HST data from the current archive system, DMF, we are also looking ahead to late 1993 when we are scheduled to start receiving data from the permanent HST archive system, DADS. DADS will require some work from CADC personnel as it has a completely different database structure, writes files, in a different format, to Sony optical disks rather than LMSI. There are two advantages for us in moving to DADS. The optical disks have a 6.5 GB capacity, more than three times that of the LMSI disks, and the data will be written in FITS format.

We officially started the CFHT Archive on September 18, 1992. We are automatically writing all CFHT data to Sony optical disk (6.5 GB) in Hawaii with the FITS headers being sent over the network. The headers are used to automatically update the CFHT database

in Victoria. While the basic mechanisms are in place, much work remains to be done before we have a working CFHT Archive.

We have several CD-ROMS which are available for NFS mounting over the network. We have been doing this with HST Guide Star Catalog for the last year or so and it has been quite successful. The catalogs which we have permanently available for mounting include:

- HST GSC North
- HST GSC South
- IRAS Sky Survey Atlas (co-added scans)
- ADC Selected Astronomical Catalogues
- Green Bank Sky Maps and Radio Source Catalog
- NRAO - Images from the Radio Universe
- Einstein Observatory Database of HRI Images in

Event List Format

As well, we have many other CD-ROMS which can be made available as needed. The available CD-ROMS include:

- Einstein Observatory Database of IPC Images in Event List Format
- Einstein Observatory Catalog of IPC sources
- Einstein Observatory Slew Survey (version 1.0, January 1, 1991)
- Einstein SSS, MPC, FPCS Data Products (June 1, 1992)
- IRAS Sky Survey Atlas (individual scans)

If you are interested in accessing any of these CD-ROMS from your machine please let us know by sending e-mail to cadc@dao.nrc.ca.

Bulletin du CCDA

C'est avec plaisir que nous annonçons la disponibilité de la nouvelle version SPARC du logiciel STARCAT/*Preview*. STARCAT est l'outil d'accès au catalogue d'observations et aux données HST. En plus, STARCAT est aussi l'outil d'accès à une cinquantaine de catalogues astronomiques tel que le IRAS Faint Source Catalog et le HST Guide Star Catalog. Jusqu'ici, pour utiliser STARCAT, un usager était obligé de se relier à l'ordinateur du CCDA. La nouvelle version de STARCAT roule sur l'ordinateur de l'utilisateur et utilise le mécanisme client/serveur pour communiquer avec les bases de données du CCDA. Cette nouvelle version comprend aussi *Preview*, un outil XWindow pour STARCAT qui a été présenté à la réunion CASCA à Halifax. *Preview* permet l'utilisateur d'afficher un spectre ou une image à basse résolution associé à une observation dans un catalogue. Les catalogues disponibles pour *Preview* sont: IUE Low Resolution Spectra et les données publiques HST GHRS, FOS et FOC. Nous avons planifié d'ajouter HST WF/PC vers le mois de mai. STARCAT/*Preview* est disponible via anonymous ftp de [cadc.dao.nrc.ca](ftp://cadc.dao.nrc.ca) (134.87.150.40) sous `pub/software/starcat`. Les instructions d'installation sont dans le fichier `README.starcat`.

Un nouveau logiciel sera disponible en 1993 qui permettra un usager de chercher dans n'importe quel catalogue STARCAT pour une correspondance avec une liste de coordonnées. Ce logiciel XWindow appelé Xcat est un prototype et nous vous encourageons de l'utiliser et de nous faire parvenir vos commentaires. XCAT sera disponible via anonymous ftp de [cadc.dao.nrc.ca](ftp://cadc.dao.nrc.ca) sous `pub/software/xcat`. Les instructions d'installation sont dans le fichier `README.Xcat`.

Nous offrons également un système de documentation disponible sous X-Windows. Cette application, appelé Xdoc permet de se connecter à notre serveur de docu-

mentation pour STARCAT et autre document important pour HST. Ce n'est qu'un prototype pour l'instant et plusieurs autres fichiers se rajouteront au cours des semaines. Cet outil est disponible via anonymous ftp sous `pub/software/xdoc`.

Si vous êtes intéressé à suivre les opérations quotidiennes du HST, nous avons développé pour vous un programme X appelé xhot!. Cette application vous permettra de savoir quelles sont les projets d'observation qui sont en train d'être réalisés. Cet outil est disponible via anonymous ftp sous `pub/software/xhot`.

Le CCDA reçoit régulièrement les données publiques HST du STScI. Nous recevons en moyenne 3 disques optiques LMSI (2,2 Gbytes) par semaines et au 4 mars nous avons 79 disques. Nous avons toutes les données de 1990 et la plupart des données de 1991. Les données de 1992 nous parviennent au fur et à mesure qu'elles deviennent publique.

Le système d'archivage HST - Data Management Facility (DMF) - sera remplacé à la fin de 1993 par un nouveau système: Data Archiving and Distribution Systems (DADS). La transition à DADS impliquera du travail additionnel de la part du personnel du CCDA car la structure de la base de données sera complètement différente. De plus les fichiers seront écrits sur un différent disque optique (SONY) en utilisant un différent format. Malgré la tâche additionnelle, il y a deux avantages au système DADS - la capacité du disque optique SONY est 3 fois celle du LMSI et les fichiers seront en format FITS au lieu de GEIS.

Le CCDA a commencé à archiver les données du télescope CanadaFranceHawaii (TCFH) le 18 septembre 1992. Toutes les données du télescope sont copiées sur disque optique SONY (6,5 Gbytes) à Waimea tandis que les en-têtes des fichiers FITS sont transférés via le réseau à Victoria ou ils sont incorporés dans le

catalogue TCFH. Quoique les éléments de base sont maintenant en place, il reste beaucoup de travail à faire avant que le catalogue devienne un outil astronomique.

Depuis un an, le CCDA offre la possibilité de monter sur votre ordinateur via NFS, les CD-ROMs du Guide Star Catalog. Comme les sites qui se sont prévalus de ce service ont été satisfaits, nous avons décidé d'ajouter plusieurs CD-ROMs. Les catalogues qui sont disponibles en tout temps sont:

HST GSC North
 HST GSC South
 IRAS Sky Survey Atlas (co-added scans)
 ADC Selected Astronomical Catalogues
 Green Bank Sky Maps and Radio Source Catalog
 NRAO - Images from the Radio Universe

Einstein Observatory Database of HRI Images in Event List Format

D'autres CD-ROMs peuvent être montés à la demande:

Einstein Observatory Database of IPC Images in Event List Format
 Einstein Observatory Catalog of IPC sources
 Einstein Observatory Slew Survey (version 1.0, January 1, 1991)
 Einstein SSS, MPC, FPCS Data Products (June 1, 1992)
 IRAS Sky Survey Atlas (individual scans)

Si vous êtes intéressés à utiliser ces CD-ROMs à partir de votre ordinateur, veuillez envoyer votre requête à cadc@dao.nrc.ca.

CANADIAN ASTRONOMY PUBLICATIONS

December 8, 1992 to March 5, 1993

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.

- Abraham, R.G., et al, *Is the BL Lac AO 0235+164 being lensed by its intervening MgII absorber?*. Dominion Astrophysical Observatory, 23-Feb-1993.
- Babul, R., Katz, N., *Does the baryon fraction in clusters imply an open universe?*. Canadian Institute for Theoretical Astrophysics, 18-Jan-1993.
- Bolte, M., Hesser, J.E., Stetson, P.B., *CFHT observations of globular cluster cores I. Blue straggler stars in M3 (NGC 5272, GC 1339+286)*. Dominion Astrophysical Observatory, 26-Jan-1993.
- Boothroyd, A.I., Sackmann, I.-J., Ahern, S.C., *Prevention of high-luminosity carbon stars by hot bottom burning*. Canadian Institute for Theoretical Astrophysics, 18-Jan-1993.
- Cote, P., Welch, D.L., Fischer, P., Irwin, M.J., *The detection of an extended moving group near the galactic disk*. McMaster University, 15-Jan-1993.
- Davidge, T.J., *The stellar content of NGC 3109*. Dominion Astrophysical Observatory, 23-Feb-1993.
- Davidge, T.J., *Imaging of fields in the inner halo and outer disk of M31*. Dominion Astrophysical Observatory, 22-Dec-1992.
- Davidge, T.J., Boeshaar, P.C., *The spectroscopic properties of extreme M dwarfs in the two micron region*. Dominion Astrophysical Observatory, 22-Dec-1992.
- Fernie, J.D., *The stability of cepheid lightcurves*. David Dunlap Observatory, University of Toronto, 23-Feb-1993.
- Fernie, J.D., Lawson, W.A., *The pulsational nature of R Coronae Borealis: light and radial velocity variations during 1990 and 1991*. David Dunlap Observatory, University of Toronto, 23-Feb-1993.
- Fernie, J.D., *The period change of RT Aur: an update*. David Dunlap Observatory, University of Toronto, 19-Feb-1993.
- Fernie, J.D., *The variability of UU Herculis stars: observational aspects*. David Dunlap Observatory, University of Toronto, 23-Feb-1993.

- Fernie, J.D., Kamper, K.W., Seager, S., *Goodbye to Polaris the cepheid*. David Dunlap Observatory, University of Toronto, 19-Feb-1993.
- Fernie, J.D., *A photometric search for new UU Her stars*. David Dunlap Observatory, University of Toronto, 23-Feb-1993.
- Frail, D.A., Moffett, D.A., *Deep VLA imaging of pulsar-powered nebulae and the beaming fraction of young pulsars*. NRAO, 5-Jan-1993.
- Freedman, W.L., Madore, B., *Recent improvements to the Cepheid distance scale*. IPAC, 27-Jan-1993.
- Garrison, R.F., Kamper, K.W., Beattie, B., Ridder, A., Shelton, I., *A CCD spectrograph for the University of Toronto Southern Observatory (UTSO) in Chile*. David Dunlap Observatory, University of Toronto, 8-Dec-1992.
- Gauthier, L., *Les habits perceptuels des astronomes et leur rôle dans la production de la connaissance scientifique*. CERN, 26-Jan-1993.
- Glass, E.N., *Taub numbers at future null infinity*. Univ. of Windsor, 8-Jan-1993.
- Hesser, J.E., *Globular clusters: clues about galaxy formation*. Dominion Astrophysical Observatory, 22-Dec-1992.
- Hesser, J.E., *Globular clusters: are they what they appear to be?*. Dominion Astrophysical Observatory, 22-Dec-1992.
- Hill, G., Rucinski, S., *Light2: a light-curve modeling program*. Institute for Space and Terrestrial Sciences, York University, 25-Feb-1993.
- Hutchings, J.B., Morris, S.C., Bianchi, L., *HST spectra of the phase-modulated wind in the SMC O+WR binary R31*. Dominion Astrophysical Observatory, 26-Jan-1993.
- Ivanov, G.R., Freedman, W.L., Madore, B.F., *A catalog of blue and red supergiants in M33*. IPAC, 27-Jan-1993.
- Iverson, R.J., et al, *Millimetre and submillimetre continuum observations of nova Cygni 1992 - a new test of mass ejection models*. David Dunlap Observatory, University of Toronto, 23-Feb-1993.
- Kaluzny, J., Rucinski, S.M., *Contact binaries in open clusters*. Institute for Space and Terrestrial Sciences, York University, 25-Feb-1993.
- Kormendy, J., McClure, R.D., *The nucleus of M33*. Dominion Astrophysical Observatory, 23-Feb-1993.
- Kronberg, P.P., Lesch, H., Ortiz, P., Bietenholz, M.F., *The Crab nebula's cosmic-ray accelerator revealed*. David Dunlap Observatory, University of Toronto, 14-Dec-1992.
- Kuijken, K., Tremaine, S., *On the ellipticity of the galactic disk*. Canadian Institute for Theoretical Astrophysics, 11-Feb-1993.
- Landecker, T.L., Higgs, L.A., Wendker, H.J., *G76.9+1.0, a supernova remnant with unusual properties*. Dominion Radio Astrophysical Observatory, 4-Mar-1993.
- Larson, A.M., et al, *A CA II $\lambda 8662$ index of chromospheric activity: the case of 61 Cygni A*. University of Victoria, 16-Dec-1992.
- Leonard, P.J.T., *Do the pop II field blue stragglers have a collisional origin?*. Los Alamos Ntl. Lab., 22-Feb-1993.
- Leonard, P.J.T., Clement, M.J., *Why blue stragglers formed via collisions may not be rapid rotators*. Los Alamos Ntl. Lab., 22-Feb-1993.
- Leonard, P.J.T., *Can physical stellar collisions explain the blue stragglers in the dwarf spheroidal galaxies?*. Los Alamos Ntl. Lab., 22-Feb-1993.
- Li, J.G., Seaquist, E.R., Wrobel, J.M., Wang, Z., Sage, L.J., *The molecular gas and star formation in IRAS bright early-type disk galaxies: I. NGC 7625*. David Dunlap Observatory, University of Toronto, 1-Feb-1993.
- Madore, B.F., *The megagalaxy project: bolometric Hubble types for galaxies*. IPAC, 27-Jan-1993.
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