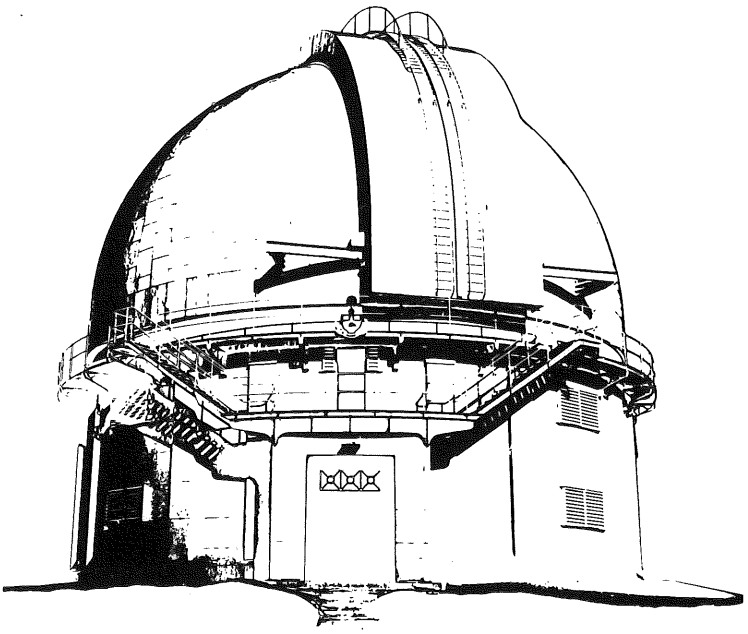

THE DAVID DUNLAP DOINGS

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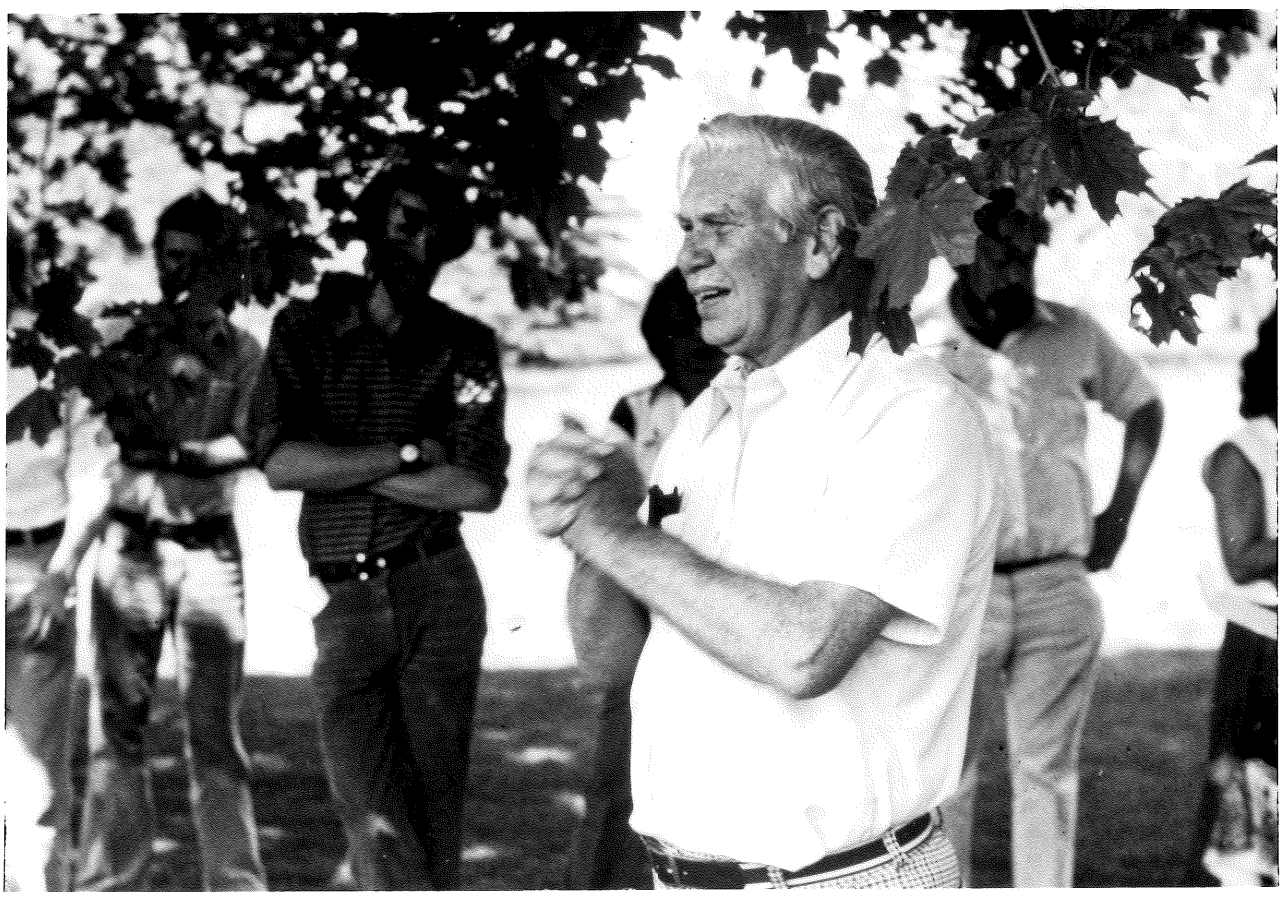

Gerry Longworth (1916-1985)

Gerry Longworth (1916-1985)

No doubt many of our readers will be saddened to hear that Gerry Longworth died of a heart-attack last July 30 at the age of 69. Since retiring four years ago Gerry had continued to live in the house he had built with his own hands in Richmond Hill many decades ago. His wife, Kay, died in 1983.

Gerry was a staff member of the Observatory for forty-five years, and remembered its early days vividly. With his passing we have lost an important link to the past, as well as a staunch friend. We shall remember him by the instruments and apparatus he built and maintained, still to be found in nooks and crannies around the Observatory, some still in use.

To his daughter, Lenora, and her family, we offer our sincere condolences.

Don Fernie

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C O N G R A T U L A T I O N S

To Brian Glendenning and John Harper on successfully passing their general examinations on Friday October 11, and October 25, 1985 respectively.

To Dale Frail who completed the requirements for his masters degree with the submission of his thesis entitled "A Study of the Physical Environment Surrounding LSI +61°303 (abstract on page 10).

To Peter and Camie Martin on the birth of their third son Taylor Gordon

To Dave (Ph.D. 1975) and Rosalyn (M.Sc. 1973) Hanes on the birth of their first child, Alexander Gordon.

To Chris and Vicki Stagg on the occasion of their first child's birth, a son named Andrew Geoffrey Louks.

To the Glendennings on the birth of their second daughter Laura Janet.

To Wlodek and Bozena Kunowski on the birth of their daughter Amanda.

POTPOURRI

John Percy spent August 15 - September 7 at the Ondrejov Observatory, Czechoslovak Academy of Sciences, collaborating with the Be star group there. His visit took place under the bilateral exchange agreement between NSERC and the Czechoslovak Academy of Sciences.

Dr. Pavel Koubsky of the Ondrejov Observatory spent six weeks at DDO starting September 23, under the same agreement.

Bob Garrison, Don Fernie and Helen Hogg attended a meeting commemorating Henry Draper held in London, Ontario on October 23.

Helen Hogg was recently back in Harvard as a keynote speaker for the Shapley Centennial. Below is a reproduction of the invitation she received.

HAPLEY

CENTENNIAL

1885 – 1985

Harvard–Smithsonian Center for Astrophysics
Cordially invites you to a
Thursday Afternoon Colloquium / Symposium

"Shapley Reminiscences"
by
Helen Sawyer Hogg
Fred L. Whipple
Willis Shapley

Phillips Auditorium
17 October 1985, 3:30 p.m.
Preceded by Tea at 3:00 p.m.

Initial and galaxies out of Shapley's
Flights from Chaos
1930

Harvard College Observatory
Department of Astronomy
American Academy of Arts & Sciences

Invite you to a Centennial Dinner
16 October 1985, 7:00 p.m.
American Academy, Norton's Woods
136 Irving Street, Cambridge

Preceded by a Reception, 5:00 – 7:00 p.m.
For the Opening of the Harlow Shapley Exhibition
Harvard University Archives
Pusey Library, Harvard Yard

NEW STUDENTS 1985/86 - WELCOME

The Department of Astronomy welcomes eight new students into its midst this year. Peter Ip and Brian Stekelenburg couldn't get enough of us and have decided to stay in Toronto after coming up through the ranks. Peter and Brian are being supervised in the master's programme by C. Dyer and J.B. Lester respectively.

Also beginning his masters degree is Mihail Karpusas from Thessaloniki, Greece. Bob Hill is in transition this term from a masters programme at the University of Western Ontario to our Ph.D. programme. Patricio Ortiz comes to us from Santiago Chile and he too is beginning his doctoral work this year. Mihail, Bob and Patricio will be working with Barry Madore. Michael Bietenholz began his doctoral programme this fall working with Phil Kronberg. Among the theoretically inclined new graduate students are Michael Seufert from McGill, Catherine Westbury from Queens and Shiu-on Poon via the University of Wisconsin. Their supervisors are M. Duncan, P. Martin and C. Dyer respectively.

THE COMING OF IRAF

No, this is not yet another satellite. This is the Interactive Reduction and Analysis Facility being developed by Kitt Peak and STScI. I went down to Tucson at the end of September in order to gain some hard facts about this system, which has been rumoured to be the solution to every optical astronomer's problems. I even took some long slit CCD data with me to get some hands-on experience. I was impressed by the system, and particularly impressed about plans for the future.

Basically, IRAF is a command language within which a large number of data reduction packages can be called. The appearance of the system to the user is claimed to be machine independent. The system I used was running on a VAX 11/750 under UNIX. STScI is supposedly making the VMS version. The only contact that the user has with the local computer operating system, however, is in logging on and entering into the IRAF command language environment.

At the moment, there are what appear to be quite flexible 1D and 2D spectroscopy packages. I played mainly with the 2D package. I was happy to find that the documentation was good enough and the required interactions simple enough that I could figure out what to do without asking any questions. This is important for people like us who might like to have the system running here. There is a less well developed package for multiaperture spectroscopy, hardly any image processing capabilities at the moment. The latter is near the top of the priorities list. Release of IRAF hinges on the completion of a major database management facility, which will enable astronomers to manipulate data in astronomical catalogues to their hearts' content. The current release date is advertised to be March, 1986.

I think that IRAF will be a boon to all of us who revolt at the thought of installing, upgrading, or writing software for the umpteenth time for handling data reductions. I have lots more to say, but I have to leave for Germany in 10 minutes. More in the next Doings.

Meanwhile, don't plan any big software development projects.

M. McCall

PAPERS SUBMITTED

C.M. Clement H.S. Hogg T.R. Wells	The Slow Variables in the Globular Cluster Messier 10
J.R. Percy	The Period of the Helium-Weak Variable Star HR 1063
R.F. Garrison	Slit Spectroscopy Report
J.D. Fernie	The Period of AG Pegasi: Having Another Go
M.J. Clement	Normal Modes of Oscillation for Rotating Stars III Variational Calculations with an Improved Set of Basis Functions
J.R. Percy	Is Tau Cassiopeiae A Variable Star?
K.W. Kamper W.R. Beardsley	Orbit Mass Ratio and Parallax of 99 Herculis
P. Leonard D. Turner	Estimated Companion Characteristics of Some Classical Cepheids Using a Photometric Method.
D.G. Turner P. Leonard D. English	New Photometric Reddenings for Northern Hemisphere Cepheid
K. Kamper	Photographic Measurements of Southern Double Stars
P. Kronberg R. Wielebinski D. Graham	VLA and 100-m Telescope Observations of Two Giant Radio Galaxies: 0634-20 and 3C445 (2221-02)
J.B. Lester R.O. Gray R.L. Kurucz	Theoretical uvbyβ Indices
D.L. Welch C.W. McAlary R.A. McLaren B.F. Madore	The Distance to M31 From Infrared Photometry of Its Cepheids
S. Mochnacki J.D. Fernie R. Lyons F. Schmidt R. Gray	FO Virginis: A Pre-Contact Binary
P.P. Kronberg	3C303: A "Laboratory" Extragalactic Jet Source

GASA Paper Recycling Report

As most of the people in the department already know, GASA has been recycling paper as a source of income for many years. The money that we earn from doing this is used to pay for the departmental events which we organize (e.g., the DDO picnic).

Recently, our paper recycling business has been injected with new life. Two trips to the Buscombe and Dodds recycling depot (one on March 7, and another on July 12, 1985) has earned GASA a total of $242.32 from 5280 lbs of paper. Special thanks go to Rick Crowe, David Holdsworth, Phil Kronberg, and Janice Leonard for making large personal contributions (more than a few hundred pounds each). Also, we are collecting the waste paper generated in the VAX printer room on the 9th floor (with Anna's blessing), which has increased the amount of paper that we collect considerably.

Please note that not all types of paper are recyclable. We are presently collecting only newspaper, white paper (e.g., photocopier paper), computer printout (e.g., PRINTRONIX paper), and white or manilla computer cards. Bound books (including telephone books) are not recyclable because of the glue in the binding. Also, VERSATEC paper is not recyclable because of the chemicals on it. Any type of coloured paper is extremely undesirable as well because of the extra processing which must be done to it (the people at the recycling depot don't encourage us to being it in). Other undesirable items include envelopes, cardboard, glossy material (like magazines), address stickers, and paper with tape or corrector fluid on it.

Also, paper is worth a lot more when it is segregated by type. In fact, Buscombe and Dodds have employees who spend their entire lives inspecting and segregating paper page by page. We have now supplied boxes for each type of paper at our collecting area (in room 1408, under the mailboxes). Please put each type of paper in the designated box.

We thank all those who have contributed, and we encourage everyone to recycle what they can. Old stacks of computer print out and computer cards are welcome. Even bringing in newspapers from home would help. Remember, each ton of recycled high-grade paper saves a dozen trees!

Lnd

Canadian Space Astronomy

On Friday October 4, 1985 Barry Madore travelled to Ottawa for a meeting of the Joint Committee on Space Astronomy with Dr. David Low who is the Assistant Deputy Minister at the Minister of State for Science and Technology. Also attending were other members of the JCSA, Alan Clark (Univ. of Calgary), Greg Fahlman (UBC), John Glaspey (Univ. de Montreal), John Hutchings (DAO) and Jim Hesser (DAO) who is the Chairman of the JCSA, as well as John MacLeod (CASCA President) and Roy van Koughnett (Canada Centre for Space Science). The meeting was something of a first, allowing us to present a strong direct case for restoring adequate funding for space science, without setting priorities or pre-judging the specific science to be undertaken, but emphasizing the urgency of the situation where meaningful participation in the design and construction of astronomical satellites requires a large lead time and a general continuing pool of funding that can be applied for on a scientific merit.

The following is the brief, prepared by John Hutchings which was left with the Ministry. In all our reaction to the meeting was positive and well worth the effort.

DEEP FROM THE HEART OF TEXAS

At the invitation of Doug Gies, and for the benefit of my Ph.D. thesis, I journeyed to Texas for a 12 night observing run at the McDonald Observatory during the second half of August. My ongoing collaboration with Post-Dr. Gies has numerous advantages for me. Most notable amongst these is access to the spectrographs and detectors of McDonald, one of the few observatories equipped to meet the stringent demands imposed by our survey for nonradially pulsating O stars. The advantages for Doug are less obvious, but I'll eventually think of one!

I arrived in Austin during the height of a heat wave with temperatures routinely in excess of 100 F. "Ah-ha", I thought, "we're not observing O stars, we're inside one!" Fortunately, most of the time we were in air conditioned oases, frequently drinking medicinal beverages ("light bear is healthy", Doug said). After a few days of softening up, we headed for the pleasant temperatures typical of the Davis mountains in August.

The McDonald Observatory is located on Mount Locke, almost 6800 feet above sea level, some 400 miles west of Austin. The scenery is rugged and beautiful, and you really can see for miles, even further if you look up. The night skies are exceptionally dark, and on the rare occasions (rare for coude observers, that is) when the moon is not dominating the sky, the Milky Way can be quite dazzling. On several consecutive nights I sighted the zodiacal light, further testimony to the darkness of the skies. The weather can change astonishingly quickly, so that even if "the skies <u>are</u> cloudy all day", "the stars at night are big and bright". As advertized, Texans put on spectacular light shows -- either lightning or ranging lasers, take your pick!

We had a good sampling of the superb equipment at McDonald during our run: 4 nights of coude Reticon spectroscopy on the 2.1m, 3 nights with the 2-channel photometer on the 36", and 5 nights of coude Octicon spectroscopy on the 2.7m. Our run had been scheduled during the "bad" time of year weather-wise, and we had heard many tales of wiped-out runs from other observers. As it turned out, we observed every night although a couple only marginally photometric. We kept telling people that it wasn't our fault, that these things <u>always</u> happen when two superchiefs collaborate...but I secretly fear that teams of Canadians may be banned from the mountain for a while!

Until this trip, I hadn't fully appreciated that the work of superchief is never done. It turned out that the first of our 2.7m nights was a public night, so Doug did the honours, and invited (forced) my participation as well. McDonald maintains a separate group of employees to staff their Visitor's Center and to handle most of their public education programs, and their efforts are well received. Most of the visitors had made reservations for the star night 6 months in advance! I thought that Doug and I made a pretty good "tag-team" (i.e. most of the jokes worked) but the only feedback I remember was the comment "Y'all talk funny"!! Doug appears to be working on his accent, but I've resigned myself to my handicap.

But all this is peripheral. The true highlight was our successful visual detection of Comet Halley with the 36" telescope on the morning of August 28, admittedly on our second try. We subsequently viewed Comet Giacobini-Zinner and had a spectacular view of M42, all for the benefit of a "Star Date" film crew who were eager to view the famed Comet Halley. Stellar bumps and wiggles fade in significance next to genuine visual astronomy! In any event, I have returned with thin blood, fond memories, 100 spectra, and numerous tales of the exploits of a former graduate student in Texas, one M.L. McCall, which I intend to publish in the Droppings unless I receive monthly payments in small unmarked bills ....

Alex Fullerton (Fln)

Comings and Goings

Dennis Crabtree was back in the Department for a one month visit on research leave from the CFHT. While here Dennis consulted with our VAX manager and implemented the most up-to-date versions of R2D2 and DAOPHOT for optical image processing of CCD data. Dennis also gave a departmental colloquium on his recent collaborative work on carbon stars in external galaxies.

M.Sc. THESIS ABSTRACT

A Study of the Physical Environment Surrounding LSI+61°303
by Dale A. Frail

The periodic variable radio star LSI +61°303 has been observed at 1420 and 408 MHz using the synthesis telescope at the Dominion Radio Astrophysical Observatory. The purpose of this study has been twofold:

(1) To monitor the flux density variations of LSI +61°303 in order to gain some understanding of the low frequency behavior of the source.

(2) To study the physical environment surrounding LSI +61°303 in order to determine whether it is the progenitor of an SNR.

A new technique was developed to extract the flux density measurements of LSI +61°303 from the interferometer observations. The method was applied successfully at 1420 MHz. At 408 MHz LSI +61°303 was relatively weak (40 mJy), and only a marginal detection was made. The rising portion of the light curve at 1420 MHz was modelled well by an adiabatically expanding cloud of relativistic electrons. In the declining phase the simple model fails, requiring a somewhat more complicated system to reproduce the observed behavior.

A 36' emission feature was detected surrounding LSI +61°303 at both 1420 and 408 MHz. On the basis of several arguments it is concluded that this extended emission is part of the thermal gas that joins the HII regions, W4 and W5. No SNR was detected around LSI +61°303.