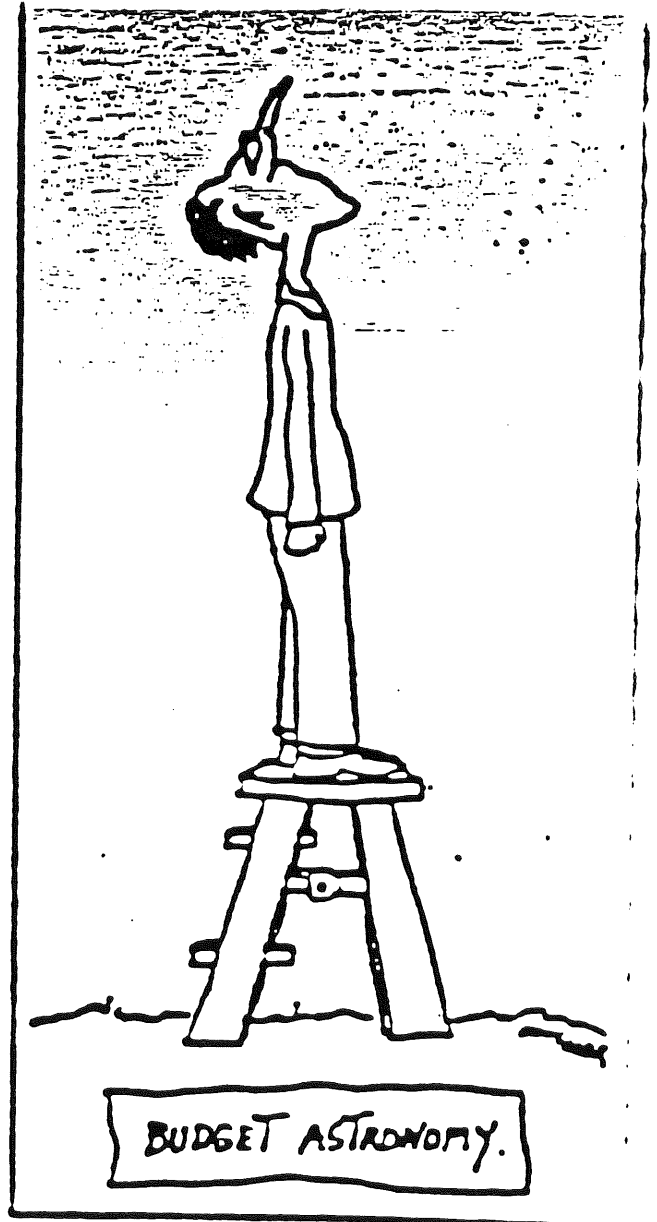


# THE DAVID DUNLAP DOINGS

Volume 22 Number 4 July 26, 1989

ASTRONOMY  
OF THE  
FUTURE

(Cartoon courtesy  
Lawrence Marschall  
via Ian Shelton)



## EDITORIAL

Isn't summer great? It is a time when we are able to devote more energy than usual to research. There is still the odd exam to give and the occasional committee meeting, but the commitment of time to that sort of peripheral activity is much less than during the academic year. I do enjoy teaching, but a little relief from it goes a long way towards keeping the level of inspiration high! Most of all, I enjoy studying the spectra of stars, as well as thinking and writing about what I see, but there is precious little time for that during the academic term. Summer provides the freedom to contemplate the universe at a somewhat slower pace. Hurray for summer!

DOINGS co-editor Chris Rogers has left Toronto to take up a position at the University of Western Ontario. For the past three years, he has given a lot of time and energy to the task of putting together this newsletter every few months. Under his guidance, the DOINGS has become mostly an electronic medium. Most of the news and articles are now submitted electronically, and the secretaries no longer have to type out the final copy of the DOINGS, since it has been assembled and printed using T<sub>E</sub>X either by Chris or by Brian Beattie (who will be doing most of it in future). Thanks, Chris, for all your efforts.

I'm pleased to announce that Don Fernie has agreed to take over the editorship in September. His perspective, sense of humour and way with words will be a welcome addition. He has some good ideas for making the DOINGS an interesting read; I'll leave the details for him to reveal next issue. The transition should be quite smooth, since he is looking over my shoulder this issue and I will be looking over his in September. Welcome aboard, Don!

During my term as co-editor with Chris, I had intended to make more of an effort to generate articles, but I found, much to my surprise, that I didn't need to beat the bushes very much. There have been an impressive number of high-quality, voluntary contributions, most of which have appeared without a great deal of arm twisting. Thanks to all of you for that help.

The DOINGS has always seemed to me to be an important link in our department, spread as it is among 3 campuses and DDO (as well as the University of Toronto Southern Observatory in Chile). We suffer more than most departments from the separations, especially during the summer. A good newsletter, well supported by the community, is one way to keep the communication lines open. That is one of the reasons I agreed to take on the editorship in spite of a load of other duties; I believe in it and care about its continuing health. The enthusiastic responses we receive, from both inside and out, indicate that a lot of others also care about the DOINGS. Jack Heard wrote volume 1, #1 back in January, 1968. I think that he would be pleased to know that his seedling has grown and prospered.

Bob Garrison

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## CONDOLENCES

To Jim Thomson on the recent passing of his father, Ross Whitelaw Thomson.

## CONGRATULATIONS

To Christine Clement who was recently elected treasurer of CASCA.

To Charles Dyer who is a new CASCA Board member.

To Peter Leonard whose second daughter, Ashley Selina Leonard arrived at 11 a.m. on July 4, and weighed 11 pounds 8 ounces (or 5.22 kg). She certainly is a big one!

To Mike Jewison and his wife, Diane Bewick, on the birth of their first child, Daniel James Bewick Jewison, on April 28. Daniel weighed in at 8 lbs 10 oz following 27 hours of labour and a C-section. Anyone who checks the user process names on MAIA was able to keep up-to-date on the status of the pregnancy and post-partum situations.

To John Percy who has begun a five-year term as Associate Dean (Sciences) and Vice-Principal (Graduate Studies and Research) at Erindale Campus, U. of T.

To John Lester who has become Assistant Chairman (Astronomy) at Erindale.

To Doug Johnstone who received the Gold Medal of the Royal Astronomical Society of Canada at a meeting of the RASC Toronto Centre on July 13. The Gold Medal is presented by the RASC Toronto Centre to the top graduating student in the undergraduate specialist program in astronomy and physics at U. of T.

To Bob Garrison who has been elected to a four-year term on the Council of the Royal Canadian Institute.

To all the shop staff at DDO for getting the Echelle working well for Fieldus' run at the end of July. As I understand it, all of the problems have been solved, finally, and we have a working instrument. We also have a very experienced crew, ready to take on the next challenge.

## COMINGS AND GOINGS

Marlene Cummins attended the Special Libraries Association Conference in New York in June. At that meeting she was acclaimed Chair-elect of the Physics-Astronomy-Math Division.

John Percy and Dimitar Sasselov attended the 1989 Spring Meeting of the American Association of Variable Star Observers, and presented papers on EU Delphini and UU Herculis, respectively.

John Percy, as Honorary President of the Science Teachers' Association of Ontario, participated in a conference at Glendon College, York University, devoted to the problem of how to attract more girls to the study of math and science in school.

Bob Garrison and Mike Jewison attended the June AAS meeting in Ann Arbor, Michigan. Several members of the department attended the CAS meeting in Montreal.

Dieter Brueckner attended CASCA '89 in Montreal, mainly to represent CASCA's Journals Programme, which has received a further year of financial support. Particularly interesting to him on the research side was a poster paper by Austin Gulliver and Joachim Stadel outlining a VMS-based automatic spectral line identification programme. Dieter stopped off in Ottawa on his way back to enjoy Canada Day from Parliament Hill with Judith and Alexander.

Andrew Yee, telescope operator at DDO for the last eight months and formerly a part-time research assistant for Christine Clement, has accepted a staff scientist position at Science North in Sudbury.

Recent visitors to the department included Margit Paparo (Konkoly Observatory, Hungary) and Jay Pasachoff (Hopkins Observatory, Williams College MA). Jay and John Percy were putting the final editorial touches on the Proceedings of IAU Colloquium #105 (The Teaching of Astronomy). Marie Glendenning has word-processed this very difficult manuscript in LaTeX.

### POTPOURRI

*The David Dunlap Observatory in Richmond Hill, Ontario is planning to hire a telescope operator in September 1989, or as soon as possible. The operator will observe with the 1.9 - m telescope and other telescopes and will provide support services to the scientific community using the instruments. Requirements are a B.Sc. in physical sciences or mathematics, some computer experience, manual dexterity, and good health. Some course work in astronomy and/or experience operating a telescope in a research environment are desirable. Applications should be sent to Ernie Seaquist and:*

*Human Resources  
Sidney Smith Hall  
University of Toronto  
Toronto, Ontario M5S 1A1*

*Welcome to the summer students who are working with staff on various projects:*

- |   |  |
|---|--|
| <i>John Percy</i>                             | <ul style="list-style-type: none"> <li>- Matthew Lister (photoelectric monitoring of bright Be stars with the campus 0.4m telescope)</li> <li>- JayAnne English (part-time: doing period analysis of photometric observations of bright Be stars, obtained in multi-wavelength, multi-longitude "campaigns")</li> <li>- Greg Scott (editing the accumulated observations from the AAVSO photoelectric photometry program, and doing period analyses on the observations of several small-amplitude red variables)</li> </ul> |
| <i>Christine Clement</i>                      | <ul style="list-style-type: none"> <li>- Ian Walker (using LYNX and DAOPHOT to reduce some CCD data Christine obtained at Las Campanas last year)</li> </ul>   |
| <i>Charles Dyer</i>                           | <ul style="list-style-type: none"> <li>- Francine Marlo</li> </ul>   |
| <i>Stefan Mochnacki<br/>&amp; Karl Kamper</i> | <ul style="list-style-type: none"> <li>- Paul Hendry (doing photometry of a contact binary, trying to monitor spot groups)</li> </ul>  |
| <i>Ernie Seaquist<br/>&amp; K. Iizuka</i>     | <ul style="list-style-type: none"> <li>- Nigel Ross Price</li> </ul>   |

Among the undergraduates: Doug Johnstone has completed his B.Sc. and has a NSERC 1967 Scholarship and is going to UC Berkeley. Rene Plume has a U. of Texas fellowship to do graduate work there. Paul Hendry is staying here and JayAnne English is going to UBC.

Bob Garrison discussed Supernova 1987A on "Speaking of Science", a series of half-hour, in-depth radio programs produced by the Royal Canadian Institute. Bob's episode was broadcast on CJRT-FM on May 22, and will be re-broadcast on various other stations around the world.

Dieter Bruckner organized a somewhat-cloudy but otherwise very successful International Astronomy Day program in the department on May 13. Other members of the department who participated in the displays, demonstrations and observing sessions included: Michael Bietenholz, John Dubinski, Gang Li, Patricio Ortiz, John Percy, Francois Rouleau, Ian Shelton, Ian Short, Barry Sloan and Yin Zhan.

Dieter Bruckner and Brian Beattie are working feverishly to prepare the IAU Travelling Telescope for its first assignment - an International School for Young Astronomers, in Cuba in August. (*Last minute news: cancelled for lack of funds*)

David Leggatt, a recent graduate of our specialist program, is now a physics teacher at Marc Garneau Collegiate in East York. This school has developed a science curriculum with a special emphasis on space and other high-technology subjects. David is presently developing an astronomy course, in consultation with John Percy.

Mike Jewison was the invited speaker at a fund raising dinner held by the Regina Astronomical Society on June 2. During the visit to Regina, he also spoke to several groups of high school students regarding recent advances in astronomy and about astronomy as a career. In addition, he was interviewed by the Regina Leader-Post which resulted in a short blurb appearing in the local paper.

### From Our Far-Flung Graduates

Richard Gray writes: "I have accepted a tenure-track position at Appalachia State University, which will provide a new telescope and good support for research. Mary and I will leave for Appalachia on 20 July, and expect to arrive in Boone on about 1 August. We are going to drive in a fairly leisurely way; Mary has never seen the "interior" United States. We will probably linger (or go slowly) through the Rocky Mountains, and then make a mad dash through sweltering Kansas!

My new address will be:

Department of Physics and Astronomy  
 Appalachian State University  
 Boone, NC 28608  
 Tel (704) 262-2430 (office)  
 Bitnet: GRAYRO@APPSTATE

We had a very nice holiday in Wales (5 weeks!) with Mary's family. I was able to indulge my archeological hobby with a trip to Dartmoor. I also discovered a neolithic hammer stone in a farm near to the family farm."

### Cause For Concern? Does the Earth Orbit the Sun?

(Quotes extracted from a report in the Manchester Guardian;  
commentary by Bob Garrison)

"Most people don't know that the Earth orbits the Sun once a year!" Last year at the AAAS meeting in San Francisco, Dr. John Durant and Dr. Geoffrey Evans of Oxford described a survey of 2,009 Brits and compared the results with a similar survey of Americans by Dr. John Miller of Northwestern.

"Sixty-two percent of the Britons knew that the Earth went round the Sun, against 72 percent of the Americans, but only one in three from each country knew how long the cycle took."

"Only 60 percent of the Britons knew that oxygen came from plants, against 81 percent of the Americans. About 35 percent from each country thought radioactive milk could be made safe by boiling. Nearly 60 percent of Britons thought that lasers worked by focusing sound waves - the Americans were slightly better informed. Some 25 per cent from each nation thought sound travelled faster than light. But more than 90 per cent from each country knew that sunlight caused skin cancer, and that hot air rose."

"More Britons than Americans accepted the Big Bang theory of the origins of the universe, but fewer than half of the Americans, against more than 75 per cent of the British, accepted Darwinian evolution to explain human origins." The Guardian commented that high interest in science is not matched by knowledge. "There is not much cause for complacency in either country."

Would Canadians fare any better? I fear not; they probably would do worse. In my experience, the Canadian public *is* interested in science, but too many people suffer from a phobia of it. They don't get enough exposure to the real excitement of science. Reporters and interviewers also get excited, but science news rarely makes it into the media; it is shunted at the editor's desk.

As educators, we have a *lot* of work ahead of us. We could do more if the media would let us, but first we would have to educate the producers and editors; they are the block, since very few (or none) have any science background at all. Then we would have to encourage some of our students to go into science writing or high-school teaching, especially if their talents lie more in those directions than in research.

Projects like the DDO Saturday night and Tuesday morning visitors' programs are good examples of how to reach a part of the public that the university usually does not reach, but the university administration, in its "wisdom (??)", is cutting the funding for those efforts to reach the public. Our puny efforts to educate the public may only touch a few thousands each year, but maybe if we instituted the idea of "each one teach one," we could make some headway into the masses. (See, *e.g.* John Percy's article on p. 7.) We must do something, or the funding for science will inevitably plummet to new depths, much to the detriment of the economic well-being of the university and the nation.

## University of Toronto Mentorship Program

by John Percy

This is a program whereby exceptionally talented high-school students can work on research projects with university faculty. I have been a mentor for three years, and am more and more enthusiastic about this program every year. I had two students in 1988-89. Greg Scott studied the long-term changes in period and brightness in U Mon, an RV Tauri star and, in collaboration with Dimitar Sasselov, interpreted these in terms of evolutionary models. Greg and Dimitar discussed their results at a stellar discussion group on May 3, and the project is now being written up for publication. Greg also gave a presentation to one of the science classes at his school - a useful way of feeding astronomy back into the school system. Todd Veldhuizen, my other student, was based at Erindale. He investigated various ways in which 200 years of data on R Sct, another RV Tauri star, could be used to diagnose chaotic behaviour in this star. His grasp of the mathematical and physical concepts, and his computer skills, were truly awesome (to use a popular word) - especially for a 15-year-old! His project provides some very useful ideas for further work in this area.

I encourage you to volunteer as mentors. Application forms will be available in a few weeks. If you would like more information, and/or would like to see Greg's or Todd's project report, please let me know. The mentorship experience is much like supervising an AST425 student, except that you are dealing with students with somewhat less background and (on the average) somewhat more enthusiasm and motivation. The students who apply are the "cream of the cream", and through the application and interview process, you decide which student(s), if any, will work with you.

[ Ed. note: The benefits for the department are that these bright, highly motivated students will probably go into astronomy and could form the core of a future class at U. of T.; if not, they will at least remember the opportunities afforded them by Toronto.]

## An Interesting Historical Note

by Jim Thomson

An interesting footnote to the memorial service of my father, Ross Whitelaw Thomson, was that a distant relative of mine, Robin Whitelaw, commented to me "Gee Jim; I bet you didn't know of your connection to C.A.Chant." Investigating further, I found that my great grandmother's youngest brother was Chant's brother-in-law and old college pal. This was Dr. Tom H. Whitelaw who is often referred to in Chant's autobiography. In 1910, he was minister of health in Edmonton and was one relative that Chant frequently visited in his travels. Around 1898, Chant and his wife Jean lived two doors down from my grandparents on Yorkville Ave. and were raising a family at the same time. I couldn't find any reference to a tragic episode connecting our families. Apparently, in 1917, Chant's only son James, died of an appendicitis attack while visiting the Whitelaw farm with my father and other relatives. James was 15 and my father Ross was 9 at the time.

## GASA Gossip

by Mike Fieldus

My first act this issue is to apologize for not writing a column in the last issue of the DOINGS. If you can actually believe it, I was busy doing Astronomy at the time and was unable to put pen to paper (yeah, sure Mike). Okay, the truth was I was captured by a roving gang of Shriners searching for enlightenment (and released soon afterwards when they didn't find it). Okay, the real truth is I forgot.

We certainly do have lots of ground to cover this issue. The event of the season, Bob and Laura's wedding, went off as planned, much to the surprise of the groom's friends, who attempted to ship him off to Victoria during the Stag. The stag itself was an event to be remembered, although most attendees don't. It began as a Jack and Jill event at a local watering hole, where Laura clearly outlined the roles each would play in the ensuing years ("No, I'll be the love slave"). The male folk then ventured out for some supper and to watch some exotic dancers (we won't go into any details as the subject matter was rather sexist, but let it be said a good time was had by all except Rob Straker). It was around this time when Brian Glendenning uttered those now famous words exemplifying the clear thinking of which Astronomers can be capable, "Mike, don't give me any more to drink; Don't give me any more alcohol; Hey, give me back my beer". We then retired to Lee Oattes' home to watch some movies and wait for Rob to pass out so we could draw all over him. It is my understanding that the women did much the same thing.

The reception after the wedding, it was agreed by all, was easily the best anyone had been to that week. Several very important things were learned that night. First, don't go onto the dance floor if Dimitar is up; you are likely to get hurt. (The same can be said about Jaymie Matthews, but there the abuse is mostly verbal.) Next, ask for ID when dancing with the bride's attractive young cousin, she may be a lot younger than you think (she certainly was a lot younger than I thought). Third, most people don't think it is necessary to wear deodorant when going to a spring wedding (it is).

Weddings aside, several other rather interesting incidents have been reported to me over the last several weeks. Mike Bietenholz just returned from a trip to Europe, where he claims to have done nothing worth gossiping about (which in itself is worth gossiping about). Dan Blanchard has been seen driving around town with a car full of Teddy Bears (pressure getting to you, Dan?). Ian Short has admitted to a drinking problem (two hands, and only one mouth). Actually one of the most interesting, if unfortunate, occurrences was the newly married Bob Hill breaking his nose. He claims to have done it while playing baseball. The truth is baseball did play a large role in the matter, but the actual story is that Laura was away for the weekend, and Bob accidentally tried to pick up George Bell's wife.

Baseball season is in full swing on Campus at the moment. After a rather inauspicious beginning against a team from the competitive division (we are in the "hopeless" division), where we learned a valuable lesson about practices (don't play against teams that have them), we have proceeded to go undefeated to this point in the regular season. Ed, our sometimes pitcher, is the first to bid for a nohitter in our league (which is not a good thing when you consider he is pitching to his own team), but we wisely pulled him in the third inning. Tom Bolton plays regularly, and complains bitterly that our field has no fence to hit the ball over, allowing the outfielders to play as deep as they like on him (he has been able to hit it over their heads on occasion, none the less).



Laura got her first extra base hit of her career, scoring three runs, when the outfield foolishly moved in because "she was a girl". All in all, just about everyone in the department has come out to play at sometime or another, and lots of fun has been had by all except me (who, in his big chance at shortstop, missed firstbase on three consecutive throws, and is on his way back to the outfield).

As a last comment, I will observe that the new plan for the Saturday night tours of having a night assistant on each week to look after the telescope is working out very well, as we now have someone to blame when the drive gets left on (no names given).

### UPCOMING COLLOQUIA

- Sept 13 TBA
- Sept 20 Simon White (Steward) "TBA"
- Sept 27 Michael Fall (STScI) "Dust and Damped L alphas systems"
- Oct 4 Simon Lilly (UH-IFA) "TBA"
- Oct 11 Steve Kent (CfA) "Structure and Dynamics of Barred Galaxies"

### HIGHLIGHTS OF THE LIBRARIES' 1988/89 ANNUAL REPORT

by Marlene Cummins

Expenditures (excluding salaries etc.) totalled \$31,245.59, a decrease of 8% from last year.

The number of books purchased increased to 324 from 266 at an average cost of \$64.32. Expenditures were down for journals, online searching, administrative costs and the computer system.

DA circulation is down about 11%. We have returned to the level we were at before we experienced a large jump in 1985/6.

The system for the electronic version of the IAU circulars changed from telephone line to e-mail, thus saving the department about \$60 per month.

The cataloguing system was changed from manual to computer-oriented. Plans include a local (i.e. astronomy only) public access online catalogue in 1990.

Significant progress was made on the recataloguing of the observatory publications (DA) and the catalogues (DDO).

A new photocopier was installed.

A report discussing the library's serious space problems and possible solutions was produced. This report was distributed and discussed at the July staff meeting.

The complete annual report is available from the library.

## PAPERS SUBMITTED

## PREPRINTS BY FACULTY AND STUDENTS RECEIVED IN THE ASTRONOMY LIBRARY

April 8 - July 12 1989

Carlberg, R.G.; Couchman, H.M.P. "Mergers and bias in a cold dark matter cosmology." DDO/U of T. 26-May-1989

Clement, Maurice J. "Normal modes of oscillation for rotating stars IV. Nonaxisymmetric variational solutions for 15 M models". DDO/U of T. 12-May-1989

Evans, Nancy Remage; Bolton, C.T. "The mass of the classical cepheid SU Cygni." SAL-ISTS York U/DDO/U of T. 2 June 89

Fernie, J.D. "Color excesses on a uniform scale for 330 cepheids". DDO/U of T. 3 May 89

Hasegawa, Tatsuhiko I.; Rogers, C.; Hayashi, Saeko Suzuki. "Observations of HCO+ in B335." Saint Mary's U. 30 May 89

Kim, K.-T.; Kronberg, P.P.; Giovannini, G.; Venturi, T. "Discovery of large scale magnetic fields in the plane of the Coma-A 1367 supercluster." DDO/U of T. 5 June 89

Kronberg, P.P.; Kim, K.-T. "A detailed measurement of the halo in the Coma cluster of galaxies, and its magnetic field." DDO/U of T. 23 May 89

Nemec, James M.; Clement, Christine M. "A search for double-mode RR Lyrae stars in M3." UBC/DDO/U of T. 29 June 89

Percy, John R.; Landis, Howard J.; Milton, Russell E. "The photometric variability of EU Delphini." DDO/U of T/Erindale College. 9 June 89 Percy, John R. "The photometric variability (?) of Phi Cassiopeiae". DDO/U of T. 28 June 89

Sasselov, Dimitar D.; Rucinski, Slavek M. "Formaldehyde mapping of Rho Oph B1: the densest cold prestellar core." DDO/U of T. 29 May 89