

THE ^{DAVID} DUNLAP DOINGS

Vol. 23, No. 4

September 28, 1990



The Pope meets Bob....

FROM THE EDITOR

Those of you who read the last issue of the Doings will remember that Bob Garrison was to spend a month of the past summer teaching at the Vatican Observatory Summer School. The Pope paid a visit to the School while it was in full swing, and Bob took the opportunity to present him with a copy of *University of Toronto: A Time to Remember*. In truth, our cover picture calls for editorial comment on the lengths to which some observers will go in their quest for ensuring clear observing weather, but I shall refrain.

Bob has promised us a full report on the School for our next issue. It had some unusual moments, as when a disturbance ensued over a passing rainstorm. The former proved due to a student who had spent all of her twenty or more years in Lima, Peru, and had never in her life seen rain before.

Such unexpected reaction to everyday events reminds me of the story of the nineteenth century missionary and explorer, David Livingstone. Camped in the African bush on occasion he took the opportunity to wash his hair. Bent over the camp basin, hands working up a lather on his scalp, he saw one of his local helpers staring in horror. The man, never having encountered soap before, rushed off to announce that the visitor had opened his scalp and was washing his brains.

Don Fernie

OUR COVER

Bob Garrison is shown presenting the book *University of Toronto: A Time to Remember* to Pope John Paul II. *Photo:* official Vatican photographer.

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COMINGS AND GOINGS

Raman Prinja of University College London visited the Department from August 17 to September 17 to work with Tom Bolton on problems of wind variability in OB stars. His visit was funded jointly by NSERC and the UK Royal Society as part of an exchange agreement between the UK and Canada.

Alex Fullerton (Ph.D. '90, Bartol Research Foundation) visited the Department from August 20-24 to consult with Tom and Raman on projects on which they are collaborating, and Doug Gies (Ph.D. '85, Georgia State University) visited Tom and Raman at the Observatory on September 10 for the same reason.

Dimitar Sasselov and John Lester were at the CFHT for the period 22-28 July. They had four nights using the Fourier Transform Spectrometer (FTS) to obtain spectra of a variety of F-M stars in the 1.1 micron region. This was their fourth observing trip to use the FTS, and it was the most successful by far. The weather was excellent, except for a brief period of poor seeing on the last night, and the FTS worked almost flawlessly. Up until now the operation of the FTS has been as much black magic as science, so that Jean-Pierre Maillard, the person who built the FTS, has come in from Paris to support all observing with the instrument. This time Dimitar and John were able to operate the FTS by themselves, after a brief refresher on the first night, thanks to a new, comprehensive manual and the continuing work of the electronics staff of the CFH. The ability to run the FTS without assistance was also a necessity. Jean-Pierre had to hand over the FTS on the first night to rush back to Montreal where his son was getting married. The timing of the run was extremely fortuitous because it ended just in time for Dimitar and John to represent the department at the farewell party given for Bob and Marion McLaren and their children marking the end of Bob's term as executive director of the CFHT. It was a western style ("paniolo" in Hawaiian) evening featuring a barbecue and a live band at Hale Kea in Waimea. The success of Bob's term as director was clearly evident in the warmth and happiness of the farewell. Among the crowd of people at the party were Peter Wizinowich and his wife. As related in DDD vol. 22, #6 (1989), Peter is enjoying his work on adaptive optics at Steward Observatory. He is currently working out a possible design for the MMT.

Marlene Cummins attended the Special Libraries Association Conference in Pittsburgh from June 9-14 where she assumed the Chair of the Physics-Astronomy-Math Division.

Marlene also attended a seminar at the National Research Council (CISTI) in Ottawa on June 18.

The new president of the University, Rob Prichard, paid a visit to DDO on June 27. After a tour of the Observatory he was taken out to dinner by a small group of the staff. We were much impressed by his enthusiasm, informality, and quick questions.

Dieter Brückner, after twenty-two years in the Department, has resigned his position as general assistant to join his wife, Judith Irwin, in Ottawa. Dieter has enrolled in a Faculty of Education program there with an aim of becoming a highschool teacher. We thank him very much indeed for his many years of service and wish him well in his future career.

Sandra Scott has relinquished her post as Telescope Operator to take over Dieter's job downtown. The position has been expanded to include managing the departmental computer system when Patricio Ortiz graduates.

Mario Pedreros (PhD 1984) has, in turn, accepted the Telescope Operator position. Welcome back, Mario!

Laura Carriere, assistant to Phil Kronberg, and husband Bob Hill, will be leaving in a week or two for Bob to take up a postdoc at Louisiana State. Again our good wishes. Laura's happy memories: "Our softball team went undefeated this summer, even though Ed was our captain."

CONGRATULATIONS

Kim Venn (Astrophysics Specialist, 8T8) was married to Dr. Evan Skillman on September 8. Present and former department members in attendance included Tom and Susan Bolton, Mike Fieldus, Kim Fernie, Dimitar Sasselov, Francine Marleau, and Doug and Rebecca Gies. The ceremony was held on her parents front lawn on a perfect Ontario Fall day, and a reception followed in and around their rural farm house. A wonderful time was had by all. Evan has just completed a post-doc in the Astronomy Department at the University of Texas where he shared an office for several months with Doug Gies. He is now Assistant Professor of Astronomy at the University of Minnesota. Kim will continue to work on her Ph.D. at the University of Texas, but she will be spending her time at Minnesota, where her work will be supervised by Roberta Humphreys.

M.J. and Jim Thomson are pleased to announce the birth of a healthy 7.3 lb baby boy, Perry James, on July 8/90. He is almost double that weight now.

Esther Oostdyk, former secretary at DDO and DA, and Lee Oates (PhD 1987) were married in a charming ceremony at their home on July 21.

Charles Dyer has been promoted to full professor.

Shenton Chew is now a Canadian citizen.

Patricio and Jessika Ortiz have a new addition to their family: Barbara, born on June 7, weighing 2.9 kg.

POTPOURRI

The note below comes to us from Tom Bolton:

I've received word today that I've been appointed to the Lyman Far Ultraviolet Explorer Science Steering Committee by the Canadian Space Agency. My term is two years starting this month. The other members are G. A. H. Walker (1 year term), F. Wesemael (2 years), Don Morton (3 years), John Caldwell (3 years), and J. B. Hutchings (project scientist, ex officio member).

Our job is to

1. Solicit views of Canadian astronomers and communicate them to CSA and NASA.
2. Inform community of Lyman developments and its research potential.
3. Consider scientific goals, major technical issues, operation plans, data handling, etc.
4. Work with industrial contractors when necessary and assist with tests.
5. Advise CSA on the procedures adopted by the collaborating countries for time allocation.

Launch is scheduled (!) for the first quarter of 1998 (provided pigs have learned to fly by then).

Tom

Francis J. Ahern of the Canada Centre for Remote Sensing has been appointed Vice-Chairman for North America of the International Union of Forestry Research Organizations Working Group on Remote Sensing. (Frank, when he was a postdoc at DDO in 1968, was the first person to identify a peculiar radio source with the variable 'star' BL Lac.)

David Goodenough (PhD 1969) of the Major Projects Office of the Canada Centre for Remote Sensing has been elected Vice-President of the Institute of Electrical and Electronic Engineers Geoscience and Remote Sensing Society, the largest such organization in North America.

Ray Carlberg, who spent some time at Caltech this past summer, brings word of Hugh Ross (PhD 1972):

Hugh Ross has been mentioned as a figure of considerable interest at the U of T a few years ago. Displayed prominently on the Caltech Theoretical Astrophysics "Interaction Room" coffee table is a paperback "The Fingerprint of God" by Dr. Hugh Ross (Promise Publishing: Orange, CA). Back page reviews come from Allan Sandage, Don Page and various church leaders. A quick reading finds it to be well written, providing a fairly lucid account of basic cosmology up into the 1980's or so. The inflationary universe is included, although Guth's "free lunch" idea, and Wave Function of the Universe type concepts are not. Extensive references to papers by Abell, Sandage, Zeldovich, Shapiro, etc. provide thorough documentation for his presentation. The first half of the book is scientific cosmology, the second half biblical. In particular he takes aim at the creationists for their tendency to invent miracles as needed to reconcile literal interpretations of the Bible with the available evidence on ages and sizes. Ross' reconciliation of the two is briefly discussed and clearly relies on a very strong personal faith. Overall, it is hard not to be fairly impressed with the book. I haven't read much of this type of literature, but this particular effort seems to be outstandingly sensible, thoughtful, and lacking in the crazed fervour that many scientists tend to associate with this approach to the subject.

He doesn't mention Toronto in his acknowledgements, although his educational history includes it. Hugh has a wife, Kathy, and two children and works for Reasons to Believe, a nonprofit outfit based in Pasadena associated with his church. As a reading of the Saturday paper here rapidly shows, his church falls squarely in the mainstream, at least by Southern California standards.

SUMMER IN AFRICA

John Dubinski

It's been about a month and a half now since Frances and I returned to the home-and-native-land and we are only just coming back in phase (back to triaxial ellipsoids – sigh!). We finally made the big trip to Africa and it was as incredible as we had hoped. It's hard to describe the whole trip but I'll mention some of the highlights.

First off, we spent a week in Israel, mainly in Jerusalem with a side trip up to Masada and the Dead Sea. We flew El Al which was a big pain since they interrogate you for about half hour when you're checking your luggage, asking you a billion questions about where you're going and why and whether or not a suspicious person gave you a package which looks like a bomb to deliver to Israel. Sigh! Jerusalem is a fascinating city since it is after all the focal point of the big three religions about the one god. Neat places to see were the Dome of the Rock (where Mohammed ascended to heaven) and the Church of the Holy Sepulchre (where Christ was crucified and buried). Lots of fascinating holy sites but some were less convincing than others, like Jesus' footprint (yaa right...). Another interesting place was this tunnel used for diverting water from the Gihon spring into the ancient city of David hewn out of solid rock, built about 700 BC. You waded hip deep in water hunched over with a candle for about 45 minutes. (Actually it was fun until the candle went out and I reached into my submerged pant's pocket for our spare matches.)

Africa was a lot of fun. We picked up this safari tour in Nairobi and headed out for a tour of the countryside and a lot of National Game Parks. The average male astronomy grad student (depressed, hard up, womanless - you know, take Mike for example) would have liked it since the group consisted of 8 women and 3 guys (take your pick!) though they were a bit on the young side (19ish) for the most part. The guide and the cook were these two African guys, one a Masai and the other a Kalenjin. They were really friendly and a lot of fun. Zillions of animals. Lots of pictures. It really is as good as all those Mutual of Omaha wild kingdom shows I watched as a kid. High points were the dead bloated hippo floating in the stream being munched on by crocodiles, the dead wildebeest being munched on by vultures, wildebeest migration with literally thousands of those buggers, hippos walking in the campsite at night, baboons ripping off your food and stuff at the camps, hippos all over the place, a couple of lions at 10 feet.

We also made it to Mt. Kilimanjaro and climbed it. It was fairly hard going, especially the last day before the final ascent to the top, but accessible even by a weako like me. Actually, we had it pretty easy since on the hike we booked there we had porters to carry our gear and our food. Pretty wimpy I suppose, but I don't think we would have made it without them. I felt sorry for these poor guys since for the most part they were ill-equipped with crummy shoes and ragged clothing which wasn't that warm. And they weren't paid a hell of a lot. Tanzania is a very poor country and you could tell. The trip itself was amazing, taking 5 days with each day revealing completely different scenery: rainforest, alpine moorland, desert, moonscape and glaciers and snow. Wow! On the day of the final ascent we reached 4700m and Frances started to get really weak, so weak that she could barely stand up. No way was she going to make it. In our group of 10, two others were puking their guts out. The altitude seems to affect people in different ways regardless of their level of fitness. There was this German couple who were drinking *bier* and smoking *zigarrettens* all the way up and they made it to the top at 5700m. I made it after freezing half to death in the minus 20 degree wind blowing off the top. We left at 1 am for the climb with Frances deciding to opt out. (She was totally out of it.) What torture! It was freezing and I was feeling tired but the 7 of us along with 3 guides made it by about 8 am. Seven hours up and about two and a half down! I counted the hours by watching the stars progress across the heavenly vault, the Magellanic Clouds were drifting in the south and the Pleiades came up in the north with Vega glaring at us over the vast silhouette of the mountain (Mt. K. is only 3 degrees south of the equator!). At some point the sun rose when I was about to give up and its warmth revitalized me, giving that last bit of energy to make it to the top. Its something you should try some day!

We spent our last few days on the coast enjoying the Indian Ocean beaches and reluctantly returned to Nairobi and then back home to TO to finish that good ole PhD.

NOW THEY TELL US!

Don Fernie

Those of you who, like me, have been writing papers for more years than you probably should will recall the bad old days when manuscripts were all done on typewriters. This meant that when the typist was finished you had to go through the thing with a pen, putting in all sorts of special symbols like circles with dots in them; in particular, you had to get stuck into the references and start putting in squiggly lines under volume numbers to denote boldface and so on. But then came the good new days where we all flail away at powerful word processors and every symbol and font known to God and man can be made to appear on a laser printer. I recently acquired a personal version of one of these and it is my pride and joy; every morning I come in and smile fondly in anticipation of the wonderful output to come.

Which brings me to the editorial in the July 1 *Astrophysical Journal*. (Note the gorgeous italics with which I announce the name.) It seems that now we authors have finally acquired the means to produce what was always wanted in the first place, a conspiracy of editors has pulled the rug out from under us. In future when it comes to references boldfaces and italics are definitely out, abbreviations have become acronyms, colons, semi-colons, and final periods are done for. Where once copyeditors raged over the periods and spacing in *Ap. J. Supp.*, they will

now demand a simple ApJS. And ampersands – my God, the irascible marginal note you would have got if you had written A&A in the old days! Now it's *pro forma*. I hope they provide a coding table; I'm still mulling over some of their simple examples: ARA&A? AZh?? Oh, and watch your parentheses, buddy; it will be "Jones 1982" in the text now, not "Jones (1982)."

But we can still do the special symbols, you say. Ah, well; that depends. As a writer for *American Scientist* I recently sent off my latest column all decked out in glorious LaserJet IIp output. But since the editor and I had discovered we could communicate by e-mail, I, as an afterthought, also sent him the column by e-mail, thinking he might like to have an early quick look at it. When eventually the proofs arrived I was surprised to see that a lengthy French name I had used was missing various accents, although I had taken care to ensure they were in my original submission. I called my editor. Hadn't he seen the accents in the original? "Nah," he said, "we just pulled the copy off the e-mail into our Macs and took it from there." I write in WordPerfect, you see, and the stripped-to-ASCII version for e-mail was missing the accents. Better go to T_EX, you think? Unhappily, they work in Microsoft *Word* on their Macintoshes down there.

So there you are: a beautiful printer but a Pyrrhic victory. Still, the reminders I write myself look just magnificent as they roll off the LaserJet.



Sky & Telescope Astronomy Day Award

The Department of Astronomy has been awarded the 1990 Sky and Telescope Astronomy Day Award. This is an international award and is sponsored by the Astronomical League and Sky Publishing Corporation. It is awarded to the group or groups whose Astronomy Day activities best exemplify the concept of Astronomy Day, namely "Taking Astronomy to the people". We share this award with the other groups from the Toronto Astronomical Community who also participated in Astronomy Day: York University (Dept. of Physics), The Toronto Centre of the Royal Astronomical Society of Canada, The McLaughlin Planetarium, and the Ontario Science Centre.

GASA Gossip

Mike Fieldus

A Social Club!?? GASA, nothing but a social club? I suppose it is easy to get that impression if your major interaction with us comes through this column, but I assure you that nothing could be further from the truth. Anyone you has been closely involved with GASA in the last few years will be able to tell you that the term “social club” is a very generous one when describing our activities.

In all seriousness, the role of GASA has changed substantially since it was first formed in the 1960's. The only real burning and lingering issue concerning the students in Astronomy today is weather or not there will be any jobs for us when we graduate, and there isn't much GASA can do about that. GASA is more concerned, as a result, with the day to day activities of the students. While this involves a certain amount of social activity, it also entails many other just as important functions. GASA provides official friends, or more appropriately official contact people, for each new student to try and make their orientation in the department as smooth as possible. Detailed course descriptions, written by students in each course from the previous year, are circulated to each student as an aid in choosing their courses for the year. GASA also maintains a fairly large slush fund that is available for emergency loans for our students (which has proven to be a godsend in light of the numerous mess ups with our scholarships over the last couple of years). Finally, GASA provides an official body for interaction with the faculty. Two GASA members regularly attend staff meetings, and it is through these two reps as well as the GASA president that the opinion of the students on various department matters is expressed to, and sought by, the faculty. So as you can see, while GASA does much more than just organize social events for the department, most of what is done makes pretty boring reading, so I will maintain my unstated policy of mainly writing about the social side of things.

So what about the social side of things? Traditionally the first column of the new year is used to introduce the new students who have just arrived in the department, so I will look after that first. We have Derek Millar from the McGill physics program, Jean-Louis Trudel from Ottawa, Siqin Huang from Shanghai, Dave Salloum from Dalhousie, David Schwartz from Alberta (eh!), Mark Neeser from Toronto, and last, but not least, and really first since she arrived last Christmas, Sylvie Landry, from Laval. So far Sylvie is the only one who has committed to a research program, and will be working with Charles at Scarborough. We have high hopes for all these new people, who will be expected to fill the shoes of Rob Straker and Bob Hill on the volleyball team.

Now that the summer is over, I guess I should relate all the fun and exciting things we graduate students got up to. Actually, it was a pretty low-key summer (from my point of view, down right boring), but some significant things did happen. We had visits from several distinguished scientists, including Wendy and Barry who dropped by to visit, give a talk (Wendy) and make sure a couple of grad students were going to finish up soon (Barry). Raman Prinja, from UCL, spent a month here as Tom's guest, and his presence drew visits from both Alex Fullerton and Doug Gies. Things were pretty hot in the stars department for a while! On the grad student side, Francine spent 6 weeks in Italy, and arrived back claiming “It is wonderful to be back in Toronto!”. Who would have thought she would be saying that. Brian Glendenning left, with

Marie and Lisa and Laura, for Charlottesville, where he is now working for NRAO. No, he hasn't actually finished his thesis yet, but that is in the works as well. (There is no truth to the rumor that he and Marie are working on offspring number 3.) Mike Bietenholtz finished his thesis, and successfully defended it in July. Yin Zhan also finished, and, at long last, so did Ed Zukowski. Ed is now in teachers college in Toronto, and Yin is starting another (!) PhD in computer science. Bob Hill is still putting in the 90+ hour weeks, and should be done early in October, when he and Laura will be off for two sunny years in Baton Rouge. Dimitar, after resolving the Cepheid mass problem, finally settled down to finish his thesis, and is slated to start October 1st at CfA. So, all in all, we say goodbye to an unprecedented number of people. I find the situation a little embarrassing, because now I am one of the senior students, and people are already asking me "So Mike, when will you be finished?" (In a year, I say...)

LETTERS

Hi Don,

I just received the latest Doings where you mentioned getting in contact with past students. I still read the Doings avidly to find out what's happening. I was very gratified recently when one of my old GASA Gossip columns was reprinted. It's nice that even though I'm gone I'm not totally forgotten.

When I left Toronto in 1983, I went to the University of Wisconsin where I stayed for almost 5 years working on the Wisconsin Ultraviolet Photo-Polarimeter Experiment also known as WUPPE. It was originally scheduled to fly on the Shuttle as part of the Astro mission back in 1986 but was delayed because of Challenger. For the past two years, I have been at NASA Headquarters in Washington, DC in the Astrophysics Division helping to run the Astro program. Astro still hasn't flown. So far this year it was supposed to launch on Columbia on April 16 then May 9 then May 16 then May 30 and now August 12. Whether it launches or not I am moving to Boulder Colorado in September to take up a position as Research Associate with CASA at the University of Colorado. Working at NASA HQ has been interesting but I am eager to get back to a job where I can do some research. My research hasn't come to a full stop. Just last week, I was observing the decline of RY Sgr with IUE.

I read Bob Garrison's article on Music at Las Campanas with interest. I'm glad that most of the Crowe Collection is still intact. Without Rick's amazing music library, I don't think I would have made it through that 19 night photometry run I had on the 24-inch ten years ago.

All the best,

Geoff Clayton

Dear Don,

Greetings from the Big Island!

It is always a pleasure to hear about U. of T. Department of Astronomy activities via the DDD! The last issue was particularly enjoyable reading fare thanks to the contributions of various wayfaring souls who at one time or another had sojourned at the David Dunlap Observatory. The Revisionist's Corner is one area which I can especially appreciate, now that I am instructing freshman-year general astronomy here at UHH. Alas, I have not been keeping a record of "enlightening" student responses to exam questions, but I can tell you that I have seen my share! Sometimes an answer is so far off the track that I wonder if the student was even attending my class! All in all, though, teaching is fun and usually stimulating, if not stressful. We do have one physics/astronomy major here who is an exceptional undergraduate; he is planning to carry on into graduate school in astronomy. He is in my senior physics classes (Advanced Classical Mechanics, Quantum Physics and Relativity), and has helped to sharpen my teaching delivery quite a bit (in part, because he asks a lot of questions and in part because he doesn't always believe the standard assumptions and theory on first hearing about it). I have also been teaching cosmology as well as a general astronomy laboratory over the past three years, so you can appreciate that my itinerary is extremely busy! There is very little spare time to work on research activities except during the summer months.

When I first came to UHH three years ago, with relatively little teaching experience under my belt, I was quite surprised at the mediocre level of mathematical abilities among my students. Even senior-level life science students who achieved good grades in everything else had trouble doing simple algebraic exercises and problems in physics class; they themselves were shocked by this, and tended to assign blame to external sources. At first, this was hard to deal with, but gradually I have come to the realization that this is an endemic problem nation-wide, and reflects poor or ineffective math/science training at lower education levels. Two recent articles in SKEPTICAL INQUIRER magazine (and one in NEWSWEEK) reinforce these basic observations. My teaching style has adjusted to this, and now I concentrate on emphasizing the importance of physical reasoning as much as possible, which is reflected in the exams that I hand out to students. I have found that using hand-out notes, as a summary of the voluminous amount of information which is routinely found in astronomy texts, is a valuable tool. Also, I hand out problem sets to force students to keep up with the course reading and material. Those who don't do the problem sets usually drop out, leaving me with a residual of genuinely interested and hard-working students. My course evaluations make it clear that although students find the course tough and demanding, they do find it fascinating and recommend it to other students. Since the evaluation of teaching at this institution is by far the most important criterion as far as promotion/tenure is concerned, I have had to invest a very large amount of time over the past three years in getting my instruction and delivery up to a high level (the average rating of instructors by students at this University is 4.5, which is several tenths of a point above the national average on a 5-point scale). Research considerations are clearly secondary, but certainly are treated more seriously here now than 10 years ago.

On a more personal level, my wife (of 4.5 years) and I are preparing for a 3-week trip to Japan, leaving tomorrow (July 11). Our 2-year old daughter Ginger is of course accompanying us, and that will be a most entertaining experience, I am quite sure! We are very comfortable here in Hilo; we bought a house in October 1988 with a view to staying here as long as we can. There is plenty here to keep us occupied in a cultural sense. Deby and I actively participate in the University chorus groups, and I have been a member of the Hawaii County Band (playing clarinet) for almost two years now. Every year the University Chorus performs a major work with the Honolulu Symphony Orchestra (like Messiah, Vivaldi's Gloria, Faure's Requiem). Of course, Mauna Kea draws many astronomy types from all over the place, and so there is quite a nice little community of astronomers here that do things together, both professionally and personally. If only it wouldn't rain so much in Hilo.....

Well, I could go on and on, but I have to get ready for this upcoming trip. I will sign off here; please convey this to whoever may be interested, and pass along best regards to all those who remember from yesteryear (can it really be six years since I left?)

With fond memories,

Rick Crowe

Don,

I was actually only half joking about the DDO marital jinx in my message for the June issue of the Doings. Unfortunately for me, my annual appearance at the Astronomy Library coincided with the distribution date for the June issue, and I suddenly found myself being "grilled" by Marlene regarding my reasons for believing in the reality of the jinx. My intent was not to pass judgement upon the curiously large number of marital "adjustments" associated with persons currently or formerly associated with the U. of T. Astronomy Department, but merely to comment upon its growing size. Marlene seemed satisfied with my explanation, but then Christine passed through the library and, upon noting my presence, asked me if I had "come to find out who had been the latest victim".

I returned to Saint Mary's much humbled by this episode. After all, I had not heard of any new "victims" on this visit. But then I read Tom Barnes' note in the same issue of the Doings.....

Dave Turner

COMPUTER DEVELOPMENTS AT DDO

Stefan Mochnecki

The development of facilities at the DDO continues. Over the summer we acquired a Sun 4/65 SPARCStation 1+ workstation, with colour monitor, 16 MBytes of memory and a 1 Gigabyte disk. This is our IRAF and IDL engine, its principal task being the reduction of CCD images and spectra. It is also in almost constant use running modelling programmes in the background.

Two optical write-once read-many disk drives have been acquired, one for Chile and one for DDO. Data will be archived onto optical disks as it is taken. These drives can be accessed via Ethernet by other computers. An EXABYTE tape drive serves as the short to medium-term backup unit at the DDO; data will be taken away by users on either 9-track tape or EXABYTE 8mm tapes. There are now three IBM PS/2 computers at our southern station at Las Campanas.

At DA, the emphasis is on highly decentralized facilities built on the foundation of the Ethernet we installed earlier this year. Several workstations have come online recently.

LIBRARY NEWS

As of May 1st we have automated the library ordering system. This is in line with the automation of the catalogue etc. Now when Rosemary places an order for a book or catalogue etc. she enters it into a database. From this database we can print the order form itself, check to make sure we don't order the same thing twice, and even do some rudimentary "accounting". One great thing about it is that we can transfer those order records to the catalog and avoid entering the data twice. And yes, this database is available on the public machine so you can check whether or not we have ordered a particular title.

PAPERS SUBMITTED

PREPRINTS BY FACULTY AND STUDENTS RECEIVED IN THE ASTRONOMY LIBRARY

June 1, 1990 to September 20, 1990

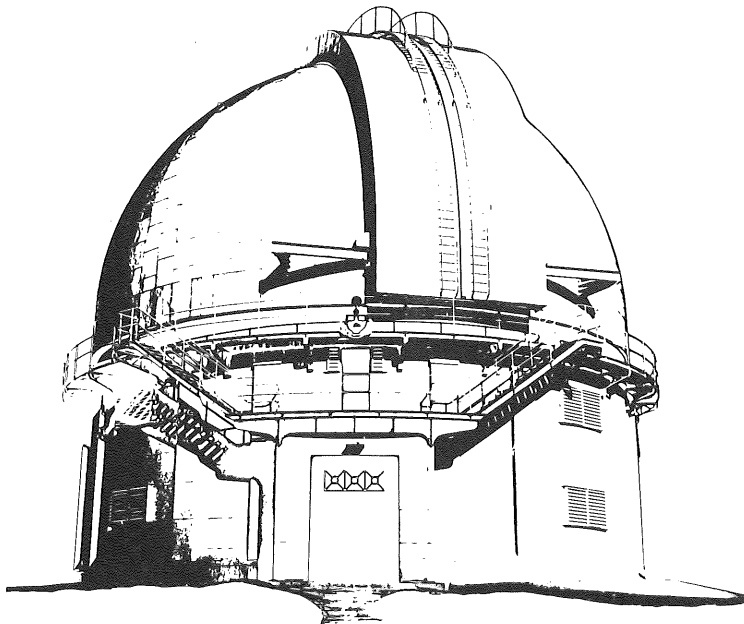
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ASTRONOMY COLLOQUIUM FALL 1990 SCHEDULE

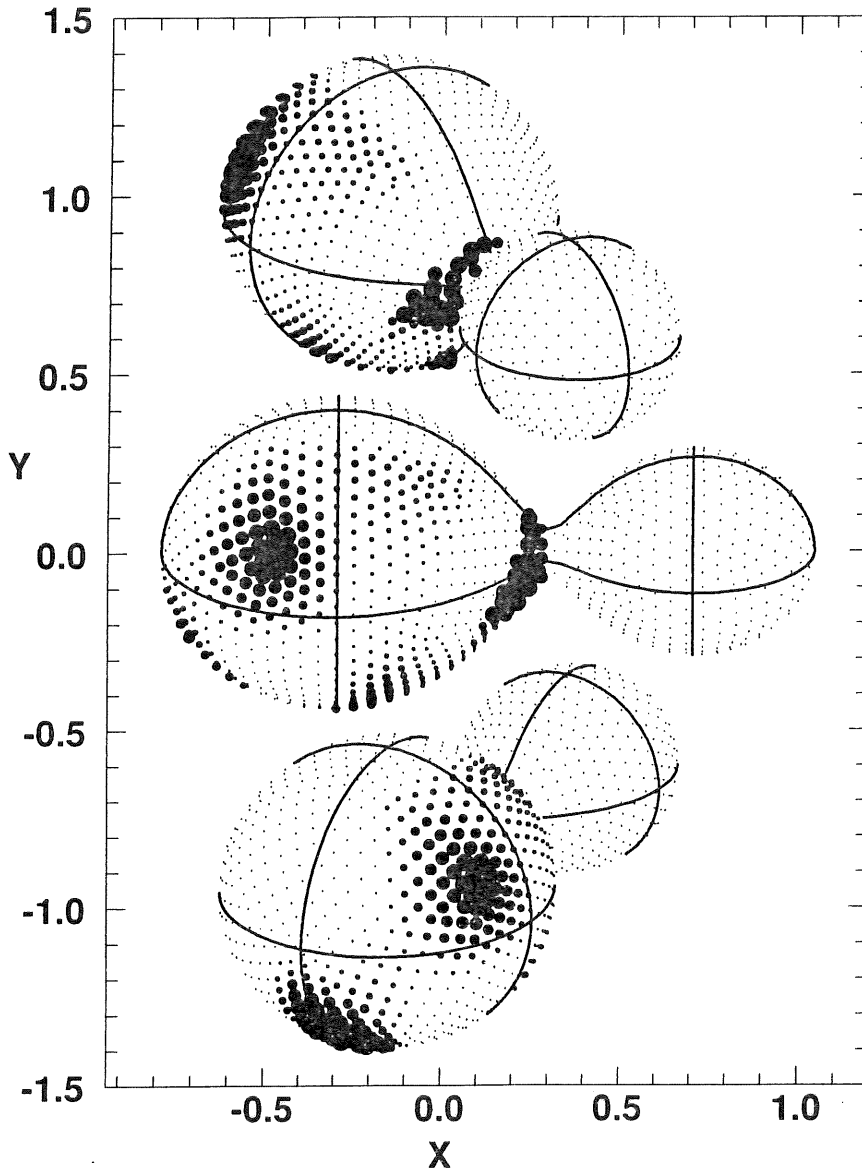
(All dates are Wednesdays, unless specified otherwise)

Sep 26	D. Sasselov	U. Toronto	"Helium in Cool stars and the Sun"
Oct 3	J. Huchra	CfA	"Mapping the Universe"
Oct 10	L. Noreau	U. Toronto	"The 3.1mm FeXXIV Line in Galaxy Clusters"
Oct 12	J. Mould	Caltech	** (Friday) ** "Streaming Motions"
Oct 17	S. Stahler	MIT	
Oct 24			
Oct 31	P. Sadler		"STAR: A New Initiative in Ast. Education"
Nov 7	M. Whittle	U. Virginia	"Virial and Jet Induced Velocities in AGN"
Nov 14	R. Blandford	Caltech	
Nov 21	J. Landstreet	Western Ont	
Nov 28	C. Jones	CfA	



THE ^{DAVID} DUNLAP DOINGS

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Surface Characteristics of VW Cep