



DAVID DUNLAP DOINGS

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UNIVERSITY OF ST. ANDREWS
DEPARTMENT OF ASTROLOGY

Applications are invited for a

Postdoctoral Research Assistant

to work with Dr T. R. Carson on theoretical astrophysics relating to stellar structure and evolution. The post, which is supported by the S.R.C., is for a period of three years from 1st October 1977. Starting salary at appropriate point within range £3333-£3761 per annum, plus F.S.S.U./U.S.S.

Applications (two copies, preferably in typescript) with curriculum vitae and the names and addresses of two referees should be lodged with the Establishments Officer, the University, College Gate, St. Andrews, Fife by 30th June 1977.

*Department of WHAT??
Has the job situation come to this, then?*

MORE MAJOR CHANGES

What was an open secret during the summer has now become official: Don MacRae will bring to an end thirteen years as Chairman of the Department and Director of the Observatory when he steps down from those posts on June 30, 1978. He will, of course, continue as a Professor on staff thereafter, and is tentatively planning a six-month sabbatical during the first half of 1979. The Dean is now in the process of establishing a search committee to recommend Don's successor.

Meanwhile, Sidney van den Bergh's request for a leave of absence during his early tenure as Director of the DAO has been approved. This will run from January 1, 1978 to July 1, 1979. A departmental committee, chaired by Don Fernie, is now considering Sidney's replacement during this period. It has been decided to look for an assistant professor in Sidney's area of research to be appointed for the full eighteen months, and, in addition, it is hoped to have a series of more senior, well-known astronomers come as visiting professors for periods up to six months apiece.

COMINGS AND GOINGS

Four new students have arrived in the Department: Robin Barker from the University of Guelph, Chris Corbally from the University of Sussex, Armando Ferro from Universidad Nacional Autonoma de Mexico, and Mario Pedreros from the University of Chile. Rejoining us is Chris Rodgers from the University of Washington. By unofficial count this brings our present graduate student population to twenty-two. We also welcome at least one new postdoctoral fellow in the person of Dennis Ward, who will be working with Bob McLaren.

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Phil Teillet successfully defended his thesis on July 26, and has now moved to Ottawa where he is a computer programmer in the Centre for Remote Sensing.

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Sylvia Alers was married to Jim Stilburn on June 10 and is now living in Victoria.

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Phil Kronberg has returned from his sabbatical plus leave of absence in Germany. Also back from sabbatical is Bob Garrison, who announces himself

"full of energy, enthusiasm, and new ideas for research and teaching." He reports that he is again living at 60 Pleasant Blvd., and that Ada and the children have returned to Toronto to stay at 127 Glengrove Avenue West.

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The Roberts Roeder and Garrison attended the users meeting for the International Ultraviolet Explorer held at NASA September 26-27.

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Attendees at the CASCA meeting in London, Ontario in May included Dot Fraquelli, who gave a paper on 'her' WR star, Shyam Jakate, and John Percy. John gave a paper on High Precision Photometry of Early B Stars both in London and at the AAS meeting in Atlanta. While in Atlanta he also attended the workshop on Teaching Strategies for Introductory Astronomy Courses. Later he was at the Planetarium Association of Canada meetings in Vancouver and Seattle, presenting papers on Recent Developments in Astronomy in Canada and on Education in Astronomy. John also played a major role in the RASC General Assembly held in Toronto in early July, during which he received one of the Society's highest awards for service.

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Tom Bolton also attended the AAS meeting in Atlanta, as did Steven Shore. Steve gave a paper on Helium Variables, and Tom one on HD 137569. Tom, while there, participated in a session of the Working Group on Photographic Materials. There was a Symposium on Planetary Atmospheres at HIA in Ottawa, August 16-19, which Tom and Chris McAlary attended. And finally, Tom was in Princeton September 5-9 preparing an observing program for Copernicus.

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Don MacRae was back in Hawaii in June to obtain first-hand information on Waimea as a site for the headquarters of the CFHT. He reports as follows: This town is north of Mauna Kea and a little west, midway across the North Kohala peninsula which is the northern point of the Big Island. Subsequently at the Board meeting in Washington in July the choice of Waimea was approved. A very attractive piece of property is being made available for CFHT purposes by the Parker Ranch. It is likely that all six current users (UH, CFHT, NASA, UKIRT, NRAO, Austria) will establish headquarters or local offices for their activities on Mauna Kea in the same location.

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Sidney van den Bergh gave the following talks: At DAO, Victoria, June 16 (Musings on Galaxy Classification); HIA, Ottawa, July 7 (Recent Observations of Early-Type Galaxies); Leiden University on August 17, University of Gronigen August 19, ESO/Geneva September 5 (all on Recent Photometry of Early-Type Galaxies); Bad Munstweisel August 25 (Multi-colour Observations of Centaurus A), and again on August 26 (Stellar Populations and the Missing Mass Problem in Galaxy Halos).

Sidney attended the ASP Directors meeting in Pomona, California June 19, IAU Symposium 76 on Planetary Nebulae in Ithica, New York June 9, IAU Symposium 78 on Nearby Galaxies August 21-26, was at Mt. Kobau July 19, and at the IAU Executive Meetings at the Observatoire de Geneve August 29 - September 2.

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Shyam Jakate spent three weeks in India during August.

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Don Fernie, during fairly extensive travels in East Africa and South Africa, spent some time at the Department of Astronomy, University of Cape Town, and at the Cape Town headquarters of the South African Astronomical Observatory. He also spent a night at the latter's observing station in Sutherland. Greetings are brought from Micheal Feast to old Toronto friends.

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SEMINARS

- September 20 : Dr. R.F. Garrison, University of Toronto
"The Faint Main Sequence of the Association I Sco".
- September 27 : Dr. C.T. Bolton, University of Toronto
"Town Meeting On Our Future PDF Needs".
- October 4 : Dr. R.C. Roeder, University of Toronto
"Report on the GR 8 Symposium".
- October 11 : To be announced.
- October 18 : Dr. W.E. Harris, McMaster University
"The Globular Cluster Palomar 13".
- October 25 : Dr. R.F. Garrison, University of Toronto
"The Interstellar Reddening Controversy; Peculiarities
There, R Not".

PAPERS SUBMITTED

- S. van den Bergh A Search for LightEchoes from Novae.

Optical Identification of the Supernova Remnant G 206.9 +
2.3 = PKS 0646 + 06.

UBV Photometry of the Luminous Young Cluster NGC 3603.

Galaxy Haloes and the Missing Mass Problem.

- Optical Identification of the Peculiar Supernova Remnant G 326.3 - 1.8.
- UBV Photometry of Globular Clusters Containing X-Ray Sources.
- The HR Diagram for Metal-Poor Disk Stars.
- D and cD Galaxies in Poor Clusters.
- Supernova Remnants in M33.
- S. van den Bergh,
S. D'Odorico,
P. Benvenuti and
F. Sabbadin
- The Evolution of Supernova Remnants.
- S. van den Bergh,
J.R. Dickel,
D.C. Wells, T.R. Gull,
and A.G. Willis
- Multi-Colour Photometry of NGC 5128 = Centaurus A.
- S. van den Bergh,
and R. Dufour
- Further Linear Polarization Measurements of Extra-galactic Radio Sources at 3.71 and 11.1 cm.
- P.P. Kronberg and
J.F.C. Wardle
- A Radio Survey of Clusters of Galaxies. I. 11.1 cm Observations of A591, A754, A1066, A1314, A1517, A2094, A2142, A2255, A2256, A2319 & A2462 Radio Data.
- P.P. Kronberg,
et al
- The Luminosity Distribution of Globular Clusters in the Virgo Cluster of Galaxies.
- David A. Hanes
- Detection of the H102 α Recombination Line in M82.
- E.R. Seaquist,
and M.B. Bell
- The Nature of Dust Grains (Topics in Interstellar Matter).
- P. Martin
- Operational Interior-Exterior Distinction and its Consequences for some surfaces of discontinuity in General Relativity.
- R.C. Roeder and
Kayll Lake
- The DDO Diode Array Spectrometer.
- Bruce Campbell
- On the Solution of the Equilibrium Equations for Rapidly Rotating Stars.
- M.J. Clement
- Light and Radial Velocity Observations of Classical Cepheids.
- Nancy Evans

C. Clement and
M. Liller

The Variable Stars in the Globular Cluster NGC 6535.

C. Clement and
H.S. Hogg

The Mira Variables in the Globular Cluster NGC 6356.

The Bright Variable Stars in Messier 5.

Revised Periods for Two RR Lyrae Stars: Variable 24
in NGC 6171 and Variable 23 in NGC 6656.

P O T P O U R R I

Bob and Marion McLaren announce the birth of their second daughter, Janet, on August 22. Also born was Eric Morse Barnes to Tom (Ph.D. 1970) and Bobbe Barnes on July 9. DDD's congratulations to both sets of parents.

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Jim de Roux has become engaged to Kathy Corrick, a second-year law student at Osgoode Hall. Their wedding is set for December 17.

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Frank Hawker has been elected to the Board of Representatives of the University of Toronto Staff Association.

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Mary Lane passed her Ph.D. General Exam on June 29.

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Roy Bishop in Halifax, while waiting for the CFHT's completion, has comforting words for prospective telescope buyers. He reports in the June issue of the RASC National Newsletter that telescope costs scale as the cube of their aperture, finding that

$$\text{Cost} = (\$600,000) \times (\text{telescope aperture in metres})^3.$$

Roy continues that since the volume of space accessible to a telescope also scales as the cube of its aperture, the cost of surveying the universe per unit volume is constant, and amounts to a mere 18¢ per cubic megaparsec! And incidentally, the cost of the human eye by this formula is a modest 21¢.

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Bob Garrison was interviewed by Barbara McLeod on the CBC-TV show 'Time for You', September 14. Topic of conversation was Bob's course *Life on Other Worlds*.

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The GASA executive committee for 1977-78 has Mary Lane for President, Martine Normandin as Vice-President, Lindsey Davis as Secretary-Treasurer, and Shyam Jakate as GSU Representative.

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Those of us returning from travels during the summer were delighted to find Hillsvieview Drive now paved (and with no signs of streetlighting), but disappointed to see the domes atop the Observatory's Administration Building not yet white. Painting was held up by a painters' strike, but the new coatings are due within the next few weeks.

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On Saturday, September 17, the Observatory held an Open House for the residents of Richmond Hill. Despite cloudy weather, more than 300 people turned out for conducted tours and lectures, and the evening was regarded as a roaring success. The Department's thanks to Bolton's Beavers (Rick McGonegal, Donna Zubrod, Gerry Grieve, Shyam Jakate, and Lindsey Davis) for bearing the brunt of the onslaught.

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The previous night (September 16) the Observatory had its annual visit from the Toronto Centre of the RASC. Another cloudy evening reduced the visitors to holding a competition to see who could identify the most constellations on star maps. Christine Clement reports that while most of the gung-ho experts could manage about 30 in the five minutes allowed, our own Chris Rodgers was the champion at 40.

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Zane reports that the DA Reference Room will soon have its own microfiche reader, which means that a considerable amount of material (like star catalogues) that could not previously be accommodated there because of space limitations will soon be available.

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REVISIONIST'S CORNER

From the Toronto Star's "Ask Andy" column of September 15, 1977:

Astronomers call each 24-hour period of time a sidereal day. It is based on the time needed for the earth's rotation. The day actually is 23 hours, 56 minutes and 4.09054 seconds in length. The missing time is put together as Feb. 29 every four years when we have 366 a.m.'s and p.m.'s instead of the usual 365.

(Reliable old Andy is a whiz at astrophysics too. Some time ago a reader asked him why certain stars have pretty colours and others not. Well, said Andy, if you've ever tossed household salt or other metallic salts on a fire you'll know how they colour the flames - like those paper logs at Christmas time. Now when we look at the spectra of stars we see that it is just those pretty red and yellow ones that have metals in them - not much, but enough to colour the star flames.)

F I N A L I T E M

The Origins of the DDO. I.

After almost five years of writing these columns, it occurs to me with some chagrin that they have contained very little on the subject of Canadian astronomical history. Towards rectifying this, and particularly because it is the start of a new academic year and new students are among us, I thought I would run a series on the origins of our own observatory. Much of the story can be told directly in the words of the one man who was almost single-handedly responsible for bringing the observatory into existence: Clarence Augustus Chant. In his later years Dr. Chant wrote an autobiography that has never, in fact, been published in full. One section of it, however, was published by the U. of T. Press in 1954 under the title 'Astronomy in the University of Toronto', which describes the struggle to establish an observatory for the University. Most of what follows, then, is excerpted (albeit rather freely edited for brevity's sake) from Chant's own writing.

Augustus Chant, in his more venerable years known behind his back to young dogs like Jack Heard as 'Gussie', was born in the tiny hamlet of Hagerman's Corners, north-east of Toronto, in 1865. He received what must have been a modest schooling in such places as Unionville and Markham, and himself became a country schoolteacher in 1883. This lasted only a year or two, though, before an increasing interest in physical science led him to enrol in the Mathematics and Physics course at the University of Toronto. These city years brought him in touch with the Astronomical and Physical Society of Toronto, an encounter that would be momentous for both Chant and the Society. For it was largely through Chant that this Society would in 1903 change its name to the Royal Astronomical Society of Canada, and he would be its dominant figure for the next half-century. He clearly envisioned its becoming a professional body, and his early appeals for an observatory indicated that the Society and the University would share such a facility. But meanwhile astronomy at U. of T. must make do with more humble fare:

The day after I received the BA degree in June 1890, I took the train on the newly completed CPR line to Ottawa to enter the Civil Service. There I remained until the autumn of the following year when I returned to the University to be Fellow in Physics. This was a sessional appointment; a year later I was made Lecturer in Physics, which was a newly created permanent position on the staff.

My continued interest in the Astronomical Society impressed upon me the fact that the University was not giving to the subject of Astronomy the attention it deserved. Two lecture courses in it were offered. One was a course in Elementary Astronomy which was taken by some of the students at the School of Practical Science and could be taken by the students in the Pass Course in the Faculty of Arts. The other was an advanced mathematical course which could be taken as an option by honour students in Mathematics. Neither course included the application of Physics to Astronomy, i.e. Astrophysics, although in the previous thirty years it had given new life to astronomical questions.

I consulted my colleagues in the departments of Mathematics and Physics, and asked if they would support me in an endeavour to improve the position of Astronomy in the University. They all cordially agreed to do so.

For about twenty years in the well-established course in Mathematics and Physics, candidates had an option in the final year - they could graduate in Pure Mathematics or in Physics. It was now proposed to add a third option, namely, Astronomy and Physics. Near the end of 1904 the University Senate passed a statute establishing the new graduating course.

The subjects to be taken in the final year were: Elementary Astronomy, Advanced Theoretical Astronomy, Practical Astronomy, Celestial Mechanics, Differential Equations, Theory of Least Squares, Physical Optics (including Spectrum Analysis).

This addition to the curriculum made desirable a change in the organization of the department. Hitherto I had been a member of the Department of Physics. Now the sub-department of Astrophysics was created, with an appropriation of its own, and I was in charge of it.

To teach effectively some of the just-mentioned subjects demands the use of telescopes and other instruments and these I set out to obtain.

The Meteorological Office, which was located on the University grounds for over sixty-five years, possessed a 6-inch equatorially mounted telescope [the one now in the north dome of the DDO administration building], the tower for which was erected to observe the Transit of Venus in 1882; and a transit instrument through which accurate time had been supplied to the city and the country for many years. The Director of the Office was willing to allow the students to use these instruments. On my recommendation the two men in the Office who had charge of these instruments were appointed Assistants in Astronomy in the University, and they gave instruction in practical astronomy to the students who went up to them. This was a considerable service to the University, but I looked forward to the time when we should have our own instruments and be able to use them when we pleased.

For many years after the honour course in Astronomy and Physics was instituted there was a steady stream of capable young astronomers going forth, and for perhaps twenty-five years it gave me great pleasure to note that practically all the astronomers in Canada, who were found chiefly in observatories, in the government services, and in the teaching profession, had been my personal students.

Travel to some of the world's great universities and observatories made Chant increasingly restless to improve the lot of astronomy at U. of T. In 1898 he had spent time as a graduate student at the University of Leipzig, and in 1901 a year at Harvard brought him not only a Ph.D., but a taste of work at the world's foremost astrophysical observatory. Again in the summer of 1905 he travelled widely among observatories in the eastern United States, examining their training methods and equipment.

In 1907 the University opened its brand new Physics Building (now the Sir Sandford Fleming Building), and Chant acquired new office and laboratory space. But these improved facilities induced in him an ever-growing impatience to have a first-rate observatory to go with them. How much longer must he wait?