

DAVID DUNLAP DOINGS

VOL. 11, NO. 1

JANUARY 31, 1978



Christmas Countdown 1977

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TODAY'S OUR TENTH BIRTHDAY!

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And what did Jack find to report in the first issue? Well, the 74-inch had just got a TV system for reading the circles, Dave Hickock and Chalmers Hardenbergh that January 8/9 had tied the record for low temperature observing at -15°F (we'd have to say -26°C now), Walter Gorza was part-time observing assistant, Sidney van den Bergh had, of course, five papers listed in the first Papers Submitted column, Alan Yen had given a talk on a hot new topic called "the long-baseline experiment", John Schmitt had arrived as a PDF, Jim Roberts was a visiting professor, Tom Clarke had just joined the Planetarium, Bob McClure was to try a new seven-colour photometric system, Anson Moorhouse was getting over injuries received in a car accident, Chris Aikman had a new Wolkswagen, and - get this - "Dr. Roeder who is now Vice-President of the Toronto Centre of the RASC urges better attendance at meetings."

Happy reading for the next ten years!

R.K. Young

It is with great regret that we report the death on Christmas Eve of Dr. R.K. Young, Director Emeritus of the Observatory. He was 91. Don MacRae, Helen Hogg and her two sons, Gerry and Kaye Longworth, and Don Fernie attended the funeral in Richmond Hill on December 28.

Don MacRae has written the following appreciation of Dr. Young for the Doings.

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Reynold Kenneth Young, B.A., Ph.D., FRSC.
1886 - 1977

Professor Emeritus and Director Emeritus of the David Dunlap Observatory

R.K. Young was the second Director of the David Dunlap Observatory. Although we honour Dr. Chant as the first Director on the day his great dream of an observatory for Toronto became a reality, he himself was 70 years old. Dr. Young took over the position of Director on the very next day, June 1, 1935. It is certainly ironic that we must record the death of Dr. Young in this issue of DDD when in November our Final Item described Young's coming to the University in 1924 and repeated Dr. Chant's obvious appreciation for RKY's part in bringing the new observatory into existence.

Reynold Kenneth Young was born in Binbrook, Ontario, close to Hamilton, on October 4, 1886. He attended the University of Toronto from 1905 to 1909, in the Honours course in Mathematics and Physics and graduated first in First Class Honours in the Astronomy and Physics Division. Dr. Young was the third person to be awarded the Gold Medal of the Royal Astronomical Society of Canada. In 1909 the six "Examiners" in Physics (Astronomy was not yet a separate department) included J.C. McLennan, the young E.F. Burton, and of course C.A. Chant.

Dr. Young went immediately to the Lick Observatory as a Fellow and after spending three years there obtained the Ph.D. degree in 1912. His dissertation was on the polarization of the light in the solar corona. It is not difficult to trace a geometric similarity between the brand new Hartmann microphotometer which he used 65 years ago at the Lick Observatory and the latest generation PDS microdensitometer we now use at the DDO. Dr. Young also published a half dozen papers on orbits of comets and asteroids while at Lick. One of them was with Miss W.E. Aitken, the daughter of the Director, R.G. Aitken, and a graduate of the University of California with honours in astronomy. She and Dr. Young were subsequently married.

When I took the third year astronomy course in 1935-36 I encountered a problem which began "The Sun was observed in Lawrence, Kansas, ..." (given δ , t and \emptyset we were supposed to calculate H and Az). It puzzled me as it must have puzzled a long series of physics and astronomy students before - why such a far-away and unlikely place as Lawrence, Kansas? As I learned some decades later, it was simply that RKY was an instructor in Astronomy and Physics at the University of Kansas in 1912-13. Although he was offered a position as Assistant Professor there, he decided to return to Canada in 1913. He went to the Dominion Observatory in Ottawa first and transferred to the DAO when it opened in 1918.

Dr. Young was the author of the very first research paper based on observations with the 72-inch telescope in Victoria. He made use of what was then the largest telescope in the world to obtain ultra-short-exposure spectrograms in a radial velocity study of 12 Lacertae, a star whose period is only 275 minutes. Beta Canis Majoris stars continue to challenge astronomers, both observationally and theoretically. At Ottawa Dr. Young had already published many studies in the field of stellar radial velocities. More than one third of the papers in Vol. I of Pub. DAO are by him, mostly as the sole author.

After coming to the University of Toronto in 1924 Dr. Young did only what teaching was required of him. In the next ten years he devoted his main interests and skills first to the construction of a 19-inch telescope (which he donated to the Observatory and which is still in regular use in photoelectric photometry) and later to the many technical details of planning, designing, testing and overseeing the construction of the dome, telescope, and radial velocity spectrograph of the new Dunlap Observatory. In the late 30's he was more often

than not to be found in the machine shop or the carpentry shop in the basement. Most of the apparatus and equipment for the new observatory was assembled by Dr. Young. Much of it was donated by or, with the assistance of young Gerry Longworth, constructed by him.

Under Young's direction the new observatory embarked on an extended radial velocity program, observing all stars brighter than a certain limit in rectangles centred on the accessible Kapteyn Selected Areas. If one was concerned to find a program which would keep the telescope busy night after night, would yield the occasional binary, and would provide a list of many velocities on a consistent system, this would be a good choice. It may have been regarded as somewhat uninspired, I am afraid, by the younger astrophysicists at the observatory. But the advent of the war in 1939 would have halted spectrographic research programs of a more personal nature anyway. As it was, routine observing with the 74-inch continued almost uninterruptedly for the duration.

With most of the members of the staff absent Dr. Young found that keeping the observatory going during the war had been strenuous. On January 1, 1946, when he had reached the age of 60, he abruptly resigned and hardly ever visited the Observatory again. He enjoyed 31 years of retirement, most of them in Cobourg, Ontario, with his second wife (who predeceased him) and near several of his step-children in whose welfare he took a genuine fatherly interest. Dr. Young died on Christmas Eve and is buried in Richmond Hill.

MR

COMINGS AND GOINGS

Ernie Seaquist had an observing run on the VLA near Socorro, New Mexico during December 12-14. He reports that the VLA is just under one-third complete (the south-west arm is nearly finished), making it possible to do aperture synthesis observations with a maximum baseline of 10 km. Carl Bignell (Ph.D. 1972) and Ernie mapped two galaxies - Maffei 2 and the peculiar spiral NGC 8079 at 6 cm with a synthesized beam of one arc second. Although there are a lot of minor problems - and polarization characteristics are a major one - the instrument is now usable for mapping if calibration sources are observed very frequently.

* * *

Undetected by the media, Jim Clarke has been a PDF in the Department since last September. Once an undergraduate at U. of T., Jim has since been at the universities of Sydney, Queen's and Manchester. He is now working with Phil Kronberg.

* * *

Another PDF, Bill Gilmore, will shortly be arriving in the Department from the University of Maryland. His interests are in radio emission from regions of star formation, and he will be working with Ernie Seaquist.

* * *

John Percy spoke on "Pulsating Stars" at the Kingston Centre of the RASC on December 6, and spoke on "What's New in Astronomy" at the annual banquet of the Niagara Centre on January 12.

* * *

Maurice Clement has started a six-month sabbatical working quietly in the Department.

* * *

Barry Madore, it seems, is taking the business of replacing Sidney very seriously: On November 2-5 he attended the HR Diagram Symposium in Washington, D.C., November 8-18 was observing with the CTIO 4-metre, the Carnegie 1-metre, and the Toronto 0.6-metre telescopes in Chile (mostly photometry of clusters and cepheids in the Magellanic Clouds and Fornax), then spent three weeks back in Cambridge, returned with Kathy for a few days in Toronto before Christmas, and promptly left for a five-night run on the 1.5-metre telescope in Chile. In all he lost only three nights to cloud. He is currently away for a four-night stint on the AAT telescope in Australia, where he will use the image-dissector-scanner to study abundance and colour anomalies in LMC cepheids and supergiants.

* * *

Only partly defeated by successive waves of snowfalls on the 46-metre dish at ARO, Phil Kronberg and Martine Normandin recently had a reasonably successful observing session to augment their data on QSO polarization at 2.8 cm. Between January 23 and 31 they spent 145 hours observing various extragalactic radio sources for linear polarization in the vicinity of 18 cm with the 100-metre radio telescope at the Max-Planck-Institute in Bonn, West Germany. Phil was also at the universities of British Columbia, Calgary, and Simon Fraser on January 18 and 19, presiding over NRC grants committee visits.

* * *

Rick McGonegal attended the Symposium on Protostars and Planets at the University of Arizona January 3-7.

* * *

Bob McLaren gave a colloquium at York University on January 18 entitled "Infrared Heterodyne Measurements of Wind Velocities on Venus".

* * *

The AAS meetings at Austin, Texas, January 8-11 were well-attended by U. of T. representatives, including Dennis Ward, Dot Fraquelli, Bob Garrison, and Phil Kronberg.

* * *

Pamela Sullivan and her husband were away several weeks over the Christmas Holidays visiting Australia. In her absence, Karen Oakley, recently retired as Sidney van den Bergh's secretary, filled in as DA secretary.

* * *

Jim de Roux was married in early December and is now working as a research assistant for Don Fernie.

* * *

Bob Garrison was in Chile for an observing run, December 15-28, and at Lick Observatory January 2-6 working on joint projects with Wampler and Herbig.

* * *

Don Fernie was in Edmonton for a colloquium to the Physics Department there on November 29 entitled "Cepheid Variables: Yesterday and Today". He brings greetings to old friends from Doug and Joan Hube, Anson Moorhouse, and Jack Winzer.

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Bruce Campbell (Ph.D. 1976), now a PDF at UBC, visited the Department January 19-20 to discuss a proposal for a Canadian space telescope.

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Austin Gulliver (Ph.D. 1976) will be a PDF at the University of Alberta, Edmonton, from April 1.

* * *

Robert Roeder gave a colloquium at Queen's University, January 26, on "Black and White Holes."

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SEMINARS

January 10 John Wheeler, University of Texas
"The Observer and the Universe"

January 17 Robert Roeder, University of Toronto
"More about Black and White Holes"

January 24 Dennis Ward, University of Toronto
"The Infrared Astronomical Satellite"

January 31 Don Fernie, University of Toronto
"Three Maverick Cepheids"

February 7 To Be Announced

February 14 Reading week - no seminar

February 21 Mike Marlborough, University of Western Ontario
Title to be announced

February 28 Jim Clarke, University of Toronto
Title to be announced

P O T P O U R R I

DDD offers congratulations and very best wishes to Chris McAlary and Lindsey Davis on the occasion of their recent engagement.

* * *

Don MacRae has been elected Chairman of the Board of Directors of the CFHT Corporation.

* * *

Phil Kronberg has recently been elected Treasurer of the Scarborough College Faculty Club, and also appointed as Physical Sciences representative on the College's Timetable Planning Committee.

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John Percy has had a spell as Acting Associate Dean of Erindale College.

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The Department is continuing in its search for senior visiting professors to spend some time with us during the next year or so. It now seems possible that Peter Biermann from Bonn will be here during the fall of 1978, and it is fairly certain that Chip Arp (Hale Observatories) and Bart Bok (Arizona) will visit us next January-February and April-May respectively.

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A new undergraduate half-course on the history of astronomy is being offered by the Department this spring. Much to the surprise, not to say horror, of Don Fernie, the instructor, the course has drawn 241 registrants.

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PAPERS SUBMITTED

P.P. Kronberg,
S. van den Bergh and
S. Button

Radio and Optical Structure of Cygnus A.

C.T. Bolton and
G. Lars Rogers

The Binary Frequency of the OBN and OBC Stars.

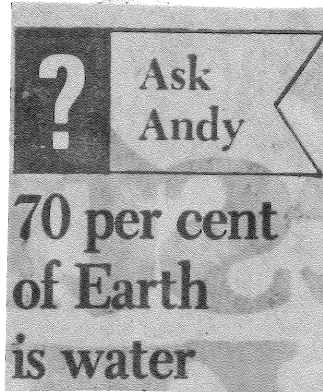
R. Wielebinski,
C.G.T. Haslam,
J.R. Baker and
P.P. Kronberg

Radio Sources in the Cluster of Galaxies
Abell 2634.

B. Madore,
R.S. Stobie and
S. van den Bergh

Further Observations of the Double-Mode Cepheid V367
Scuti in the Open Cluster NGC 6649.

REVISIONIST'S CORNER



And man, do those continents ever drift
(To be fair to poor old Andy, he had it straight -
it was the headline-writer who got it wrong!)

F I N A L I T E M

The Origins of the DDO. IV.

Not the least of his accomplishments for which R.K. Young is remembered was his great aptitude and enthusiasm for machine-shop work. Nothing, it seems, pleased him more than to roll up his sleeves and set about a lathe. So it was that in 1926, with his twenty-dollar, nineteen-inch mirror to hand, he thoroughly looked forward to building a professional telescope, optics, tube, mounting, drive, and all. This he accomplished in two years at a total cost of \$1500, working in the basement of Baldwin House (now the International Student Centre) on St. George Street, and, he carefully reported, "using only spare time in holidays and such time in the evenings and week-ends as available outside of university duties." An intrusion thereon might surely have been forgiven, even in a more scrupulous age than ours.

With the 19-inch completed, though, Young was thoroughly frustrated by being unable to use or even test it. The instrument was put on display at the Canadian National Exhibition, probably in 1929, and thereafter returned to its basement quarters for storage. There it served only to drive Dr. Chant to ever greater efforts at finding funds for a full-scale observatory.

He opened a new campaign in late-1926 with an article in the *Star Weekly* of November 27 entitled "An Observatory on the Hill - Why Not?". The 'hill', of course, was still the site near Bathurst and St. Clair, and the article was pleasingly set off by an artist's impression of the proposed observatory drawn from the earlier architectural sketches. Chant himself was rather taken with the general appearance of the article, and on a sudden impulse decided to send a copy of it to David Dunlap's widow. More than two years had passed since Dunlap's death without any exchange between Chant and the Dunlap family.

So I composed a simple letter to Mrs. Dunlap. Before sending it I carried it up to the President of the University and asked him to read it. He did so, smiled, and told me to go ahead. The text of the letter was as follows:

University of Toronto,
Toronto, Dec. 7, 1926.

Dear Mrs. Dunlap,

Herewith I enclose a page from a recent issue of the "Star Weekly", containing an article written by myself, entitled "An Observatory on the Hill."

The first time I met your husband was on the occasion of a lecture I gave at the University, during which I outlined the project for securing a fitting observatory for Toronto. He came to me after the lecture and expressed great interest in our plans. From that time onward it was a pleasure to keep in touch with him and to find out how much attention he gave to the stars.

I had hoped that at some time he would be inclined to supply what we need so much; but—he passed away.

Since then I have wondered if you would be willing to consider the question of providing the observatory—or, if not the entire observatory, the great telescope—as a memorial to Mr. Dunlap.

I know you are almost overwhelmed with appeals of various kinds, but I think this matter is in a class by itself; and I hope you will pardon me for writing to you about it.

Very sincerely yours,
C. A. CHANT

To this letter Mrs. Dunlap replied:

Hillside
Rosedale, Toronto,
9th. Dec., 1926.

Dear Prof. Chant,

Among the many memories of my married life is the one connected with the study of the stars with Mr. Dunlap.

I distinctly remember his great interest in your work. What you said about the many appeals is very, very true, and many good causes lie on my desk to be considered.

Although I cannot just now promise definitely, I will assure you that I shall keep it in my heart for consideration, for it appeals to me tremendously, and in the meantime you can come and see me and inform me more regarding the matter.

I will be very much engaged till after Xmas but perhaps you could send me data through the mail.

Very sincerely,
JESSIE DUNLAP

I was overjoyed; the goal was in sight! On December 14 I wrote to say I was greatly pleased to receive her letter and to learn that she thought my proposal worthy of consideration. As she requested,

I enclosed some literature bearing on the subject, including an account of the great observatory in British Columbia, the great telescope of which was similar to the one we should desire. [Chant's ambitions were on the rise - the DAO telescope is a 72-inch.]

It was on January 12, 1927 that I first called on Mrs. Dunlap. I fear I was a bit nervous but she was very cordial.

She told me that the proposal to erect a great observatory as a memorial to her husband appealed very strongly to her. She expressed the hope that she would be able to undertake the great project, but two or three years would have to elapse before the estate would be settled and she could enter actively on the work. Perhaps I should not wish to wait for her. I assured her that two or three years were as nothing in a great matter like this. I said that the great telescope would require three years in its construction.

At just this point in the course of events Chant's hopes underwent a curious perturbation, being suddenly raised in another direction, and as suddenly dashed again. He sent a copy of his *Star Weekly* article to a Colonel R.W. Leonard, a person whom he had previously approached for funds, albeit without success. A covering letter informed Leonard that it now seemed likely that an observatory would be built, but that funds would be needed for its library, and asked whether Leonard would care to assist in establishing such a library.

In February of 1927 Leonard replied saying he was "entirely in sympathy with the whole enterprise", and expressing a willingness to establish an endowment fund of \$25,000 for the library. In fact, he offered an arrangement whereby the money would immediately be made available through an account of his at a Trust Company upon presentation of a legal statement by the University's Board of Governors to the effect that an observatory was to be established.

Here was the snag. Mrs. Dunlap, reasonably enough, could make no legal commitment to the observatory (and wished no public announcement about it made) until her husband's estate was finally wound up. Leonard's offer would have to be held in abeyance. But Chant, of course, was happy if impatient to wait out the necessary time, looking forward to both observatory and library.

It took nearly four years to close the books on Dunlap's estate, there being almost a million dollars in legacies involved, and it was not until December 29, 1930 that a public announcement of Mrs. Dunlap's gift was made. One can imagine Chant's feelings on learning that Colonel Leonard had died three days previously, and that no mention of the library endowment was contained in his will! The Trust Company announced that even so they would have paid the \$25,000 had that much been in the account at the moment of Leonard's death; as it was, the money could only come from the estate.

All parties were sympathetic, and it was suggested that the University should "enter a friendly suit before a judge" to obtain the money, there being considerable likelihood of success. But the University had already benefited from Leonard's estate (a legacy to University College), and did not wish to appear overly avaricious. They declined Chant's suggestion. The \$25,000 was lost. "I was greatly disappointed," writes Chant in characteristic understatement. Eventually, of course, he himself would endow the library.

J.D.F.