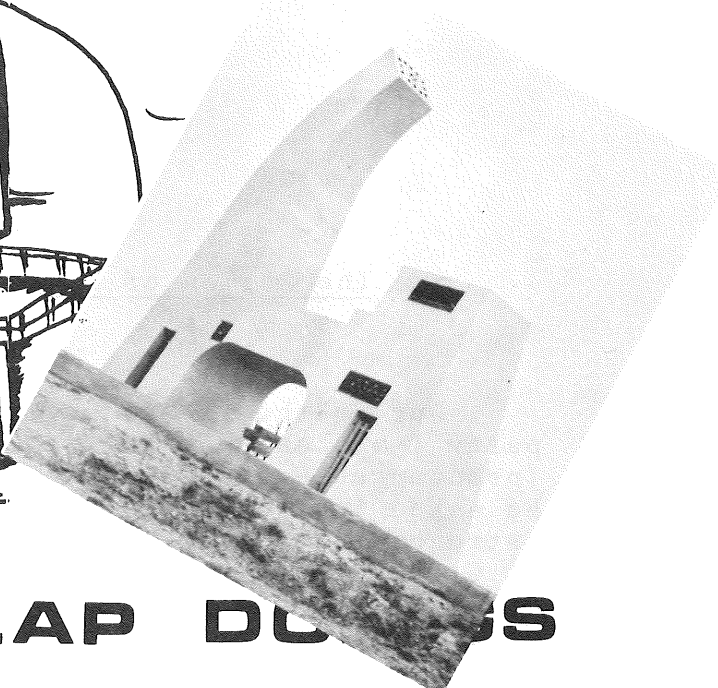
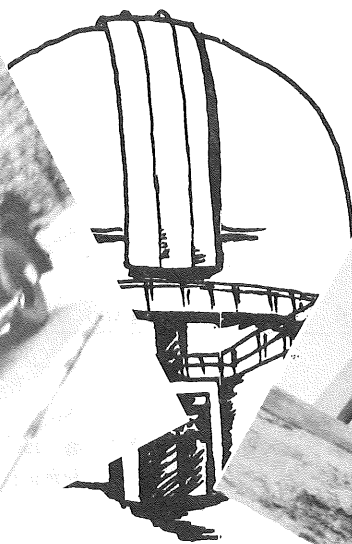
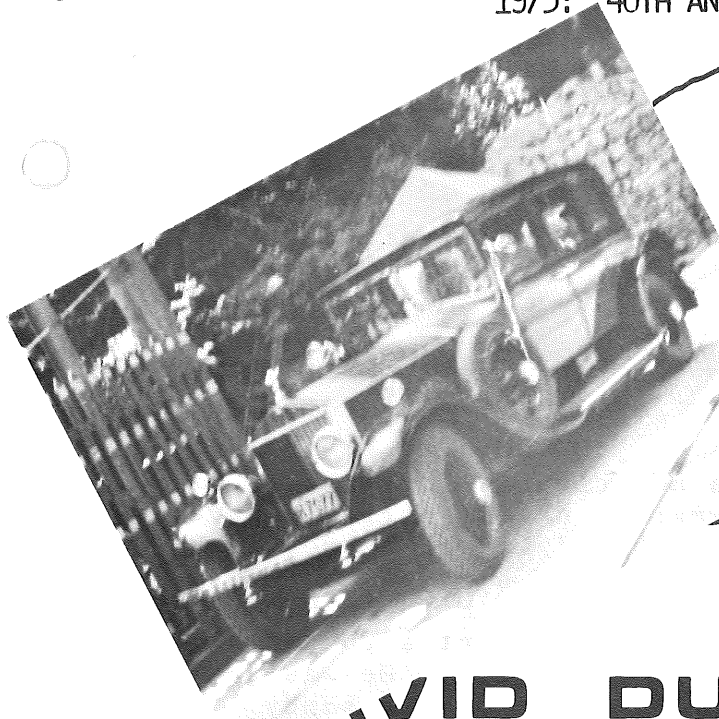


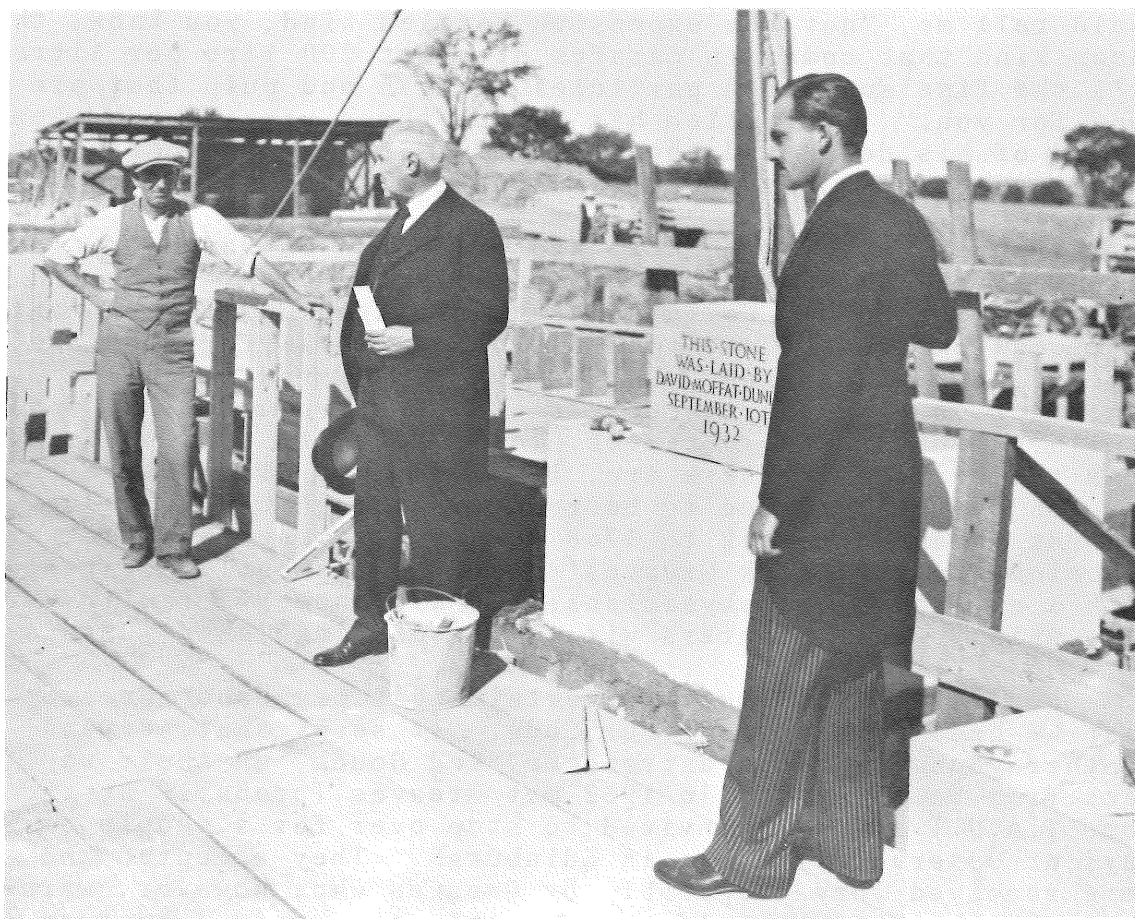
1975: 40TH ANNIVERSARY YEAR OF THE DDO.



DAVID DUNLAP DOGS

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The laying of the corner-stone of the Observatory; shown are Moffat Dunlap, President H.J. Cody and the attending mason. Above: Mrs. Dunlap's Rolls Royce at Queenston bearing Mrs. Dunlap and Dr. and Mrs. Chant to watch the pouring of the 74-inch disk at Corning, N.Y.; at the site the piers await delivery of dome and telescope (Details p. 6)

EDITORIAL

The Region of York and Two Astronomers Royal

During the recent holidays at a neighbour's Christmas party I met an anaesthetist from Newmarket named Patrick Greaves (pronounced Graves). When he learned that I was an astronomer he asked if I had ever heard of a relative of his who had been Astronomer Royal for Scotland. I had, in fact, met W.M.H. Greaves at Greenwich in the 30's and later, in 1952, spent a good deal of time with him at the Rome meeting of the I.A.U. He was 55 at that time, not very tall, rather wiry, with untidy sandy hair. He had a favourite topic of conversation: Italian wine. Not that he liked it all that well, but he kept recommending it to others for its laxative, and therefore health-promoting qualities. "You should drink lots of it with your meals", he would tell me, "not the expensive bottled kind, you know, the cheap kind that comes in carafes at about 200 lire per litre; it's the fine suspended particles of skin and pulp that are so good for you." I recalled his advice three years later when I read of his death and thought to myself that the cheap wine hadn't sustained poor Greaves to any great age after all.

Greaves, the astronomer, had been born in Barbados, gone to Cambridge 1921-25 (where he was Isaac Newton student and fellow of St. John's College), been appointed Chief assistant at Greenwich 1924-38 and then Astronomer Royal for Scotland, succeeding R.A. Sampson. He is best remembered for his long-continued pioneering research on spectrophotometry and stellar temperatures. Greaves, the anaesthetist, also comes from the Barbados. There are, it seems, two old families of Greaves there, believed to be related, though the Barbados records which date back to 1768 do not disclose the exact relationship. Patrick Greaves' family were mostly sugar-planters with a sprinkling of physicians; the astronomer's family were also mainly sugar-planters with a few distinguished jurists.

Don Fernie told me an entertaining story about Greaves that he had heard from Arthur Code. It seems that Art and another young American astronomer, Ted Houck, on their way back from South Africa in 1952 met Greaves (probably at the Rome I.A.U.) and were invited to stop over for a couple of days at Observatory House in Edinburgh. They accepted and were received very hospitably by Greaves who, however, warned them that breakfast would consist only of porridge because of the meat and egg rationing then in force in the U.K.

The next morning, as the two Americans sat in the dining room manfully choking down their porridge, someone burst through the door leading to the kitchen and they had a fleeting glimpse of Greaves sitting at the kitchen table with a great plate of ham and eggs. I passed on this story to Patrick Greaves along with the dates of Greaves tenure as Astronomer Royal, and he realized that he had been in Edinburgh twice while Greaves was there, and he wished that he had spent tuppence to phone his illustrious relative. "Might even have cadged a meal - perhaps porridge washed down with cheap Italian wine."

Within days of my making the acquaintance of Patrick Greaves, Helen Hogg and Betty MacRae at a University Arts Women's Club Meeting at the President's house met Dr. Peggy Sampson, a Professor in the Faculty of Arts at York University, and learned that she is the granddaughter of R.A. Sampson, the Astronomer Royal for Scotland who immediately preceded Greaves.

Small world!

J.F.H.

COMINGS AND GOINGS

Sidney van den Bergh spoke at the Yerkes Observatory on "The Early Evolution of the Galaxy" on Jan. 6; at the Queen's University Workshop on Theoretical Astronomy on "The Next Galactic Supernova" and "The Classification of Active Galaxies" on Jan. 9, 10 and 11; at the University of Montreal on "Supernova Remnants" on Jan. 17.

Peter Martin also attended the Queen's Workshop, giving a talk on "Interstellar Circular Polarization". Between Dec. 27 and Jan. 1 he observed with the 90-inch telescope at the Steward Observatory, continuing his work on interstellar polarization.

Robert Roeder gave an invited review paper on "Recent Developments in Cosmology" at the Queen's Workshop. He and Eli Honig and Kayll Lake had also attended the Seventh Texas Symposium on Relativistic Astrophysics in Dallas on Dec. 16-20.

Tom Bolton spoke to the Department of Astronomy at U.W.O. on Jan. 10 on "The Nature of the Non-Pulsating Binary X-ray Sources" and also at the Annual banquet of the London Centre of the R.A.S.C. on "Observational Evidence for Black Holes". On Jan. 24 he spoke on the same topic to the McGill Physics Society.

Don MacRae was in Ottawa Jan. 20 for a meeting of the partial Board of the CFHT at NRC. There have been changes in the Officers of the Board: M. Creysel becomes Chairman, Dr. Armstrong Vice-Chairman, Dr. Locke Treasurer and M. Audé Secretary. Also Don MacRae, on Jan. 24-25 was in Houston for a meeting of the Scientific Advisory Council of the Lunar Science Institute.

René Racine was in the West Jan. 21-24, visiting the Physics Departments at the University of Calgary and the University of Victoria regarding NRC Grant Applications.

Philipp Kronberg was observing at Green Bank Jan. 18-21.

SEMINARS

JANUARY seminars were as follows:

Tues. 7th D.D.O.	René Racine "Galactic Structure: Local and Distant".
Tues. 14th D.D.O.	Dr. Daniel Weedman, University of Minnesota, "Seyfert Galaxies".
Tues. 21st D.D.O.	Kayall Lake, "White Holes".
Tues. 28th D.D.O.	Dr. Gary Grasdalen, K.P.N.O., "Astronomical Studies in the Infra-Red".

FEBRUARY

Tues. 4th D.D.O. 4 p.m.	Sidney van den Bergh, "The Next Galactic Supernova".
Tues. 11th D.D.O. 4 p.m.	To be announced
Thurs. 13th McL., 102	Tom Bolton, "The Nature of the Non-Pulsating Binary X-ray Sources". (Joint with Physics).
Tues. 18th	Study Week, no countdown.
Tues. 25th D.D.O. 4 p.m.	Dr. H. van der Laan, Leiden, title to be announced.

PAPERS SUBMITTED IN JANUARY

- S. van den Bergh "The Classification of Normal Galaxies".
 "The Discovery of Comet 1974g".
- S. van den Bergh,
E. Herbst and C.
T. Kowal "Variable Stars in M33".
- K. Lake & R.C.
Roeder "A Local Time-Symmetric Classical Description
 of Events in the Schwarzschild Field".
- P. Kronberg &
P.N. Wilkinson "High Resolution, Multi-Frequency Radio
 Observations of M82".
- C. Coutts "The Unusual Period Distribution of RR
 Lyrae Variables in the Globular Cluster
 IC 4499".
- C.T. Bolton,
A. Young, C. Wicks
& R.B. Jones "Radial Velocity Variation of the K Giant
 HD 107325".
- C.T. Bolton "Radio Luminosities of Binary Radio Stars".
- J.D. Fernie "Photometry of FG SGE".

 " π Aqr. A Pulsating Be Star".

 "A Note on AX SGR".

LETTER TO THE EDITOR

Dear Ed:

The Sirgay Awards Committee takes great pleasure in announcing (somewhat belatedly) that you have been awarded the William Randolph Hearst Sirgay for your report that 1974 was the year of the Last Annual Sirgay Awards. This misquotation is truly in the tradition of "Hearstian" journalism - remember Hearst's telegram to an artist in Cuba before the Spanish-American War, "You supply the pictures, I'll supply the War." The announcement that was made by the Sirgay Awards Committee at the 1974 Christmas Countdown was that if in the future it became necessary to present another Sirgay Award to that fine astronomer Tom Bolton, the Committee would rather discontinue the awards than do further damage to his reputation.

We shall forward your award to you as soon as we can figure out how to cast it in yellow newsprint.

Yours very truly,

The Sirgay Awards Committee.

P O T P O U R R I

The Anniversary Pictures on our Cover

The corner-stone of the Administration Building was laid on Saturday, Sept. 10, 1932 by Moffat Dunlap, son of the Donor; Dr. H.J. Cody, President of the University seen in the photograph with Moffat Dunlap, offered a dedicatory prayer, and brief speeches were made by Chancellor Sir William Mulock, Hon. G.S. Henry, Minister of Education and Hon. Howard Ferguson, High Commissioner for Canada in London. Another photograph taken on the same occasion shows Mr. Haldenby, the architect, holding a copper box which contained documents and is presumably sealed in the corner-stone.

Mrs. Dunlap's chauffeur-driven Rolls Royce (ca 1930) carried Mrs. Dunlap and Dr. and Mrs. Chant to Corning on June 20, 1933 to witness the pouring of the 74-inch Pyrex disk which began at 5.30 a.m. on June 21 and continued for two hours. Dr. Young, Mr. Bell, Grubb Parsons' Toronto representative, and Mr. Mitchell, a consulting engineer, who was interested in the use of glass in the making of artificial teeth (!), drove in another car to the disk-pouring.

The piers rising starkly in the empty field had a certain Stonehenge quality, as Don MacRae has pointed out.

HSB Anniversaries

Last week Helen Hogg observed two little private anniversaries: 40 years in the same office, 24 years writing her column for the Toronto Star.

Living in the Past

Two weeks ago from the office of the Dean of Men of Victoria College came a notice of some kind addressed to Dr. R.K. Young Chairman of the Department of Astronomy! Dr. Young, retired since 1945, now living in Cobourg, should be happy to know that he isn't forgotten around the campus.

Governing Council Explained

Prof. John Dove of the Department of Chemistry who is a member of the Governing Council of the University and Chairman of its Academic Affairs Committee visited the Observatory on Jan. 21. Staff and students met him in the lecture room where he explained the structure of our University government, commented on the present financial problems of this and other Canadian Universities and answered a good many questions.

Saskatchewan Bloopers

Ed Kennedy has sent the following excerpts from some of his mid-year examination answer papers:

On two methods of coating a telescope mirror:

The first is silver coating by throwing buckets of melted silver on the very, very clean glass surface and letting it dry.

On the defects which may be found in telescopes:

spherical aberrvason

chromatic abberhition

F I N A L I T E M

Davey. I.

We came into Sal. The Southern Cross hung slantwise in the black sky, aimed dagger-like at the hot coast of West Africa. It was 4 am, the tropical salty breeze welcome after the long flight from Hamburg, and we sat in the crude terminal building drinking warm Portuguese beer while they refuelled the Jumbo. My companion was one of those indefatigable enthusiasts who find middle-of-the-night stops just the time for getting into technicalities. "What I can never see, man," he was saying in his platteland Afrikaans accent, "is how you blokes can find out things like how far away the sun is. How do you do that, hey man?". I studied my beer. Perhaps it was fatigue, but his remark immediately conjured up visions of another time and another small island in the Atlantic.

In 1958, mid-summer slowly transposing to mid-winter, I was aboard a freighter grinding its way south and east across the Atlantic. For fourteen days and five thousand miles out of New York I had brooded on my shortcomings as a sailor, so on the fifteenth day I was among the first on deck to watch the volcanic cone rise slowly above the horizon. Ascension Island, a century ago the site of man's best determination of the solar parallax, although that wasn't at the forefront of my thoughts just then. We sailed close inshore, close enough to see the waves pounding the bleak black volcanic rock, and then, exchanging a blast of the foghorn for the 'whoop-whoop' of the shore battery, passed on down the short coast. As we rounded a headland, the deck-officer nodded towards a little white beach revealed among the otherwise unrelieved rock. "Mars Bay", he said. I don't suppose it had changed much since Davey was there.

David Gill was born in Aberdeen, Scotland, on June 12, 1843. His father and grandfather were both watchmakers, and in the stable traditions of the day, Davey was himself as a youth apprenticed without question or discussion as a watchmaker. It was perhaps as well, for he developed so consummate a skill in handling delicate machinery that it became a cornerstone of his future high reputation and fame. But the boy was restless, and soon convinced his father to allow him to continue his education at Maraschal College in Aberdeen, although he had to finish his training as a watchmaker too. Here at the College and University of Aberdeen, Gill encountered Clerke Maxwell. One of their contemporaries remarks that "Judged by ordinary standards, Maxwell was not a successful lecturer; but there were some students who could catch a part of his meaning as he thought aloud at the black-board", from which, given the Victorians' predilection for under-

statement, one gathers that Maxwell was probably a totally incomprehensible and bloody awful lecturer. No doubt he would be denied tenure at the University of Toronto today. Nevertheless, Gill apparently was one of those who caught something of the great man's magic, and soon became a devotee of physics and mathematics. The channelling of his interests into astronomy came in 1863, when he went over to Edinburgh to visit Piazzi Smyth, not yet at the height of his eccentric fame. It would be interesting to know just what took place, but whatever it was, it left David Gill with a fervor for astronomy that never diminished.

By now Davey was running his father's watchmaking business by day and playing at astronomy by night. His business interests brought him to realize that Aberdeen lacked a time service, and on unearthing an old transit at the University, he refurbished it and set out on an observing program to provide a time service. He also built himself a 12-inch reflector, which he used for lunar photograph, at that time still quite a novelty. In between it all he met and married Isobel Black in 1870. Irritatingly, Isobel appears only as a shadowy figure in all the reviews of her husband's life, yet she was clearly not only a devoted wife but a charming and strong figure in her own right. It is a comment on the Victorians' attitude towards women that when Isobel wrote a book about her adventures with her husband on Ascension, nowhere in it does her own name appear; even the title page offers the author only as 'Mrs. Gill', without so much as an initial.

It was an age when wealthy gentlemen of leisure could still participate in serious science without being professional scientists, and thus Lord Lindsay, son of the Earl of Crawford, decided to build a professional-level observatory at Dun Echt, a few miles from Aberdeen. To ensure that he was firmly on the bandwagon of the day, though, Lindsay needed someone more familiar with astronomy than himself, so, having been impressed with Gill's lunar photographs, he invited Davey to become the director of the new observatory. Although it meant giving up his quite lucrative watchmaking business, Davey hardly hesitated to pass into the ranks of the professional astronomers.

The pride and joy of Lord Lindsay's observatory was a 4-inch heliometer, an instrument virtually unheard of today, but one of the best tools of nineteenth century astronomy. It was a small refractor with a split objective, the two halves of which could be moved on a micrometer with respect to each other. By overlapping the double images one could measure small angles (for example, the angular diameter of the sun - hence the name) with remarkable precision. It was with the heliometer that Gill achieved his greatest fame, for he became undisputedly its most skilful practitioner, and with it, I suppose, made the most accurate astrometric observations ever made visually.

When Gill was 31 there occurred one of the great astronomical events of the nineteenth century: the 1874 transit of Venus. The determination of the solar parallax from the eighteenth century transits had never quite lived up to expectations, yet no better method had come along in the intervening century, and now, with important new tools such as photography to hand, a new wave of optimism swept the astronomical community. This time they would not place total reliance on measuring the moments of ingress and egress - they now knew that the 'black-drop' phenomenon ruined such measures; instead they would use photography and micrometer observations to map the progress of Venus across the face of the sun.

Lord Lindsay, as usual, took no half-measures. He himself would lead an expedition to the island of Mauritius in the South Indian Ocean, accompanied not only by Davey Gill and the 4-inch heliometer, but by a considerable team of other experts as well. They all travelled out aboard Lindsay's private yacht, en route training the crew as auxiliary transit observers. Lindsay had heard that one of the difficulties with the earlier transits had been the poorly determined longitudes of the observers, so he equipped his expedition with no less than 43 of the best chronometers. Just winding them must have been a full-time job for somebody, not to mention the task of comparing them.

Davey didn't share the general enthusiasm for transit observing. He certainly contributed his share of heliometer observations when the time came, but he rightly guessed that the transits of Venus would never give the distance of the sun with really good accuracy. Instead, he was turning over in his mind a new method, a method that would hold sway for three-quarters of a century, and make Davey Gill the nineteenth century's leading expert on the problem of the solar parallax.

J.D.F.