



DAVID DUNLAP DOINGS

VOL. 10, NO. 2

FEBRUARY 22, 1977



One of Percival Lowell's sketches of Mars. (See Final Item.)

GUEST EDITORIAL

Reminiscing

With the onslaught of Winter and the experience of our last snowfall, I remember the "old days" at the Observatory. When we started, back in 1935, the road to the building was Observatory Lane, which is now closed at the railroad. It was a narrow gravel road through E.T. Stephens' property, and led up past Observatory House to a parking space directly in front of the Administration Building.

In those days regular plowing of winter snow was not provided by the University, in fact much of the time clearing the "lane" was done by shovelling. Our caretaker at that time was Mr. Tom MacKenzie, old "Mac" as he was affectionately called. On many occasions he and the groundsman would shovel by hand the bad places to make access possible. The staff was much smaller in the beginning and fewer people drove cars.

It was my routine, if I had not observed the night before, to go to the Post Office, pick up the mail, and wait at the corner for a ride in with Dr. Young, our Director at that time.

My winter recollections are of driving down Yonge Street to the lane and carefully looking the situation over. "Do you think we can get in this morning?" was a frequent question as three or four cars arrived at the foot of the lane. If it appeared reasonable, Dr. Young would lead the attack on the lane. He would begin the assault carefully, and on many occasions we came to a shuddering halt one quarter of the way in. Meanwhile the followers in his tracks would stop.

All hands to! Everyone would pile out, and then began a shoving, pushing match to work the lead car up the lane. Pushing and shoving, and going back to push and shove following cars we would eventually arrive at the building - with the staff gasping and sweating - at about 10 o'clock in the morning.

Since we all carried lunches and ate in the building, the procedure was carried out again at 5 o'clock when we left. If the weather was clearing and someone was observing extra food was carried, and opening for the night's observing was routine.

On some occasions the lane would be closed, completely impassable for many days. In which case everyone floundered in, until eventually the University was persuaded to plow the road.

DEDICATION

On Sunday, January 23rd, 1977, there was a dedication of a Conn Prelude Organ at York Central Hospital in memory of Dr. John F. Heard. The organ was donated by the Heard family and friends. Among the 70 or 80 attending the ceremony were Mrs. Heard and family (including grandchildren), Dr. and Mrs. MacRae, Mrs. Hogg, Gretchen Harris, Jean Lehmann, Marie Fidler and the undersigned.

Joan Tryggve

COMINGS AND GOINGS

A new secretary for the Department has been found! Mrs. Pamela Sutherland is welcomed in that capacity as of February 21. Previously, acting-secretary Olga Thompson left on holiday February 4, and was replaced for two weeks by Edith Fraser.

* * *

Sidney van den Bergh was back at DDO for a few days at the beginning of February, and then set off to spend the period of February 3-21 at Lick.

* * *

Don Fernie was at Brock University as Shapley Lecturer on February 15, his earlier visit having been postponed because of the major snowstorm in the Niagara region at the beginning of the month.

HOW MUCH DID THE DDO COST?

During the Christmas Holidays a reporter for the Richmond Hill North Star asked me how much the Observatory had cost to build. Since I had never seen or heard the figure, I was stumped for an answer. However, my curiosity had been aroused, and I began poking around for the answer. I quickly found that nearly all of the necessary information is scattered through Volume III of C.A. Chant's Autobiography, which can be found in the Rare Book Cabinet at DDO.

The original land purchase for the Observatory was only 123 acres. It included the 66 ft. right of way that is now Observatory Lane but did not include a 55 acre strip of land running the length of our property along Hunt's Lane (now Hillsvew Drive). The latter was purchased later when it was decided to place the "Great Dome" at the crest of the hill. The first block was purchased for \$23,000. - about \$225 an acre - and the second for \$250 an acre or \$13,750. A third parcel of 12+ acres that stretches south from behind the Director's residence to 16th Avenue was purchased by Dr. Chant himself in 1950, but he does not give the purchase price.

Presently the Observatory has slightly over 180 acres since some of the land has been lost due to the assumption of Observatory Lane by Markham Township and various road and railway widening projects. This land is worth at least \$9,000,000 at current market rates compared to the original purchase price of \$41,750.

The 74-inch telescope was ordered from Grubb Parsons Ltd. for £22,550. The mirrors accounted for £7,000 of this total. Later, when difficulties were encountered in grinding the primary mirror and an additional 1/2 inch of glass had to be ground away, Mrs. Dunlap added an additional £100 to the price. (Business practices in those days evidently were not what they are today). The prism spectrograph cost \$4,000.

The dome for the 74-inch cost \$41,000 and the pier and foundations another \$18,000. The administration building cost \$109,160 exclusive of furnishings, and it cost an additional \$15,000 to find water, drill the well, and run a pipe to the building from the well. In addition, the Director's residence was remodeled and a brick garage was built at a total cost of \$11,200.

At the time the telescope was ordered the exchange rate was \$4.87/£ so the total cost of the telescope was \$110,062. That brings the total cost of the Observatory to \$350,172. This figure is probably slightly low since it does not include shipping costs for the telescope or travel expenses incurred by Drs. Chant and Young during the planning and construction of the Observatory.

Tom Bolton

SEMINARS

- March 1: Ernie Seaquist, University of Toronto
Radio Emission From Selected Novae, Emission-Line Stars and X-Ray Sources.
- March 8: Alan Yen, University of Toronto
Real-Time VLBI With a Communications Satellite.

- March 15: Sesquicentennial Convocation - no seminar.
- March 22: Bill Clarke, University of Toronto
Canada and Space Astronomy.
- March 29: To be announced.

P O T P O U R R I

Dave Blyth cemented a long-standing friendship on Valentine's Day by becoming a Canadian citizen. He modestly waved away DDD's proffered congratulations with an "Och, man, if ye canna lick them, join them!"

* * *

The Royal Society of Canada will celebrate the bicentennial of the birth of Karl Friedrich Gauss with a symposium to be held on June 3 and 4 at the Ontario Science Centre. The program is open to all, and one of the opening speakers will be Eric Forbes, astronomer and historian of science at Edinburgh University, who will discuss Gauss' astronomical contributions. His talk will be at 5:00 p.m. on June 3 (very shortly after the close of the June Institute), and will be followed the same evening by a semi-popular talk on Gauss' life by Ken May of University of Toronto's math department. Other details can be obtained from Don Fernie, who is on the organizing committee.

* * *

Helen Hogg gave a luncheon address to The Canadian Club at the Royal York Hotel on February 14. Her subject was 'Astronomy and the Public: The Stars Belong to Everyone.'

* * *

A recent notice from the Lick Observatory announces the availability of a job of Postgraduate Research Astronomer. Prospective applicants will be heartened to learn from the fine print that the University of California does not discriminate against persons on the grounds of mental handicaps.

* * *

Phil Teillet gave a talk on The Size of, and Man's Place in, the Universe to a group of students at Western Technical-Commercial School, Toronto, on January 26.

* * *

Old hands among our far-off readers will be sorry to hear that a major fire almost destroyed the ancient Sir Sandford Fleming building on campus, on February 11. This was the building that housed the astronomy department prior to about 1966. Very fortunately the radio astronomy lab, as well as \$15 million worth of computers and some 4000 computer tapes of irreplaceable records were saved.

* * *

Our congratulations to Donna Zubrod on her engagement to Robert Keeth of Boston. Incidentally, it should have been mentioned earlier that Donna and Bob Gauthier were the chief editors of the last issue of the *Droppings*. It is not expected that this will set back their careers very substantially.

* * *

The *Globe and Mail* for February 9 reports that a group of UWO professors did only slightly better on an English literacy test than the freshmen for whom it was intended. Muttering bitterly about the way in which it had been set, they cited as the chief example of the test's incomprehensibility the following passage: "The characteristic change in brightness is readily explained on the assumption that the variable star is a binary pair with components usually differing in size and brightness, and that the orbital plane is nearly edgewise to the line of sight from the earth, so that the components eclipse one another during every revolution." The professors are reported to have been "a little twitchy" on the subject.

* * *

Sidney van den Bergh is on the organizing committees of two forthcoming IAU symposia to which he would like to draw attention: one on planetary nebulae at Cornell University June 6 - 10, the other on the H-R Diagram in Washington, D.C. November 2 - 5.

* * *

Word comes from Inge-Juliana Sackmann Christy (Ph.D. 1968) of the arrival of another daughter, Alixa, on November 22, 1976. She also reports that husband Robert Christy, of variable star fame, is now Acting-President of Cal Tech.

* * *

Steve Shore gave a talk to the Toronto Centre of the RASC on Algol: A New Look at the Old Demon, February 18.

* * *

Don Fernie is currently on one of the Provincial Government's selection panels for Ontario Graduate Scholarships. After reading some 200 letters of recommendation he has temporarily retired for re-alignment.

* * *

Gerry Grieve and Dot Fraquelli were in a car accident with the Departmental Renault on February 11. Fortunately neither was injured, which is more than can be said for the Renault. The other driver was charged.

* * *

PAPERS SUBMITTED

- | | |
|-----------------------------|---|
| J. Percy | The Pulsation Stability of Models of Normal and Metallic-Line A Stars. |
| J. Percy and M. Lane | A Search for Beta Cephei Stars I: Photometric and Spectroscopic Studies of Northern B Type Stars. |
| E. Seaquist and J. Palimaka | Thick Inhomogeneous Shell Models for the Radio Emission From Nova Serpentis 1970. |
| S.J.A. Adelman and S. Shore | On the Atmospheric Structure of the Chemically Peculiar Stars of the Upper Main Sequence. |

REVISIONIST'S CORNER

A January 28 press release from the National Science Foundation offers the following as background information to an announcement of the detection of changing weather patterns on Neptune:

Neptune revolves about the sun once every 165 years at an average distance from the sun of 4500 kilometers (2794 miles).

FINAL ITEM

The Roosevelt of Astronomy. II.

No sooner, it seems, had the Lowell-Pickering-Douglass trio set eye to telescope in the autumn of 1894 than Schiaparelli was declared vindicated. The face of Mars was practically crawling with canals, no less than 183 turning up that first run, along with a good 53 of Pickering's 'lakes'. So good were the observations that a number of the canals were even announced as double.

Within a month of his first observations Lowell was developing a theory of the happenings on Mars to which he would stick - with ever increasing embellishments - for the rest of his life. In it Lowell called on his reading in all sorts of subjects ranging from geology through biology to paleontology as well as astronomy, and, since his knowledge of most subjects was broad rather than deep, he soon incurred the outraged wrath of all kinds of specialists quite apart from those in astronomy.

Both theory and observations first appeared in early 1895 in a series of articles by Lowell in *Popular Astronomy*, while a happily astounded public got the news through an article in *The Atlantic Monthly* shortly thereafter. Details were developed at much greater length in a book *Mars*, which appeared the same year, and which would be followed by a series of best-sellers in later years.

The basis of Lowell's theory was that the planets were primordially molten, and in cooling off went through their evolution at a rate inversely dependent on their masses. This applied to their inhabiting life-forms as well as to the planets themselves. Thus little Mercury had already run its course and was now dead, the earth and Venus were at intermediate stages, while giant Jupiter had hardly begun. Mars, being between the earth and Mercury in mass, was already far advanced in its evolution; it was in fact a dying planet. Its inhabitants, struggling for survival as their planet dried up, had been forced to construct this vast network of canals to bring water from the polar caps to their centres of civilization.

It was this kind of aspect that made Lowell's theory of much wider interest than the purely scientific question of the canals' existence. For here he could launch forth into lengthy sociological dissertations, pointing out that the building of such a network of canals would be such an immense undertaking that only if the Martians had achieved planet-wide political unity could they have succeeded. How mediocre were earthlings by comparison, with their endless wars and perpetual bickering.

It must also be remembered that the whole idea of canals was then much more in the public's mind than it is today. Canals had until quite recently played a major role in the industrial development of the United States, and were still revered in song and legend. And even as Lowell's pronouncements appeared the public was reading in its daily press of the fearful struggle to complete the Panama Canal. The Suez Canal was still regarded as one of man's greatest engineering triumphs. How fantastic, then, must be the Martians' technology and social organization if they could build such canals, not merely a hundred miles long, but hundreds of canals thousands of miles in length.

Little wonder that Lowell's theory stirred up a furor far beyond the ranks of the scientists: everyone was intrigued; theologians, sociologists, novelists (remember H.G. Wells' *War of the Worlds?*) were fascinated.

All this writing and vociferous lecturing took Lowell away from Flagstaff, leaving, it seems, something of a social hiatus there. Soon Douglass was writing him "I am earnestly [sic] requested by the young ladies to state that in our parties and social gatherings your absence is deeply felt." This brought a series of replies. "Pray convey my continued regrets to the fairer, the picnic half of our world," and later, in anticipation of an early return, "Keep the girls till the end of the month if prayers can avail." This was followed by an intriguing comment on Douglass' observations of the Martian terminator: "My compliments on your 'irregularities' of the terminator. Do you connect them in any way with the wild oats which alone we observed planted by man in the neighborhood of Flagstaff?"

Lowell's relations with women have remained enigmatic. In particular the case of his personal secretary, Miss Louise Leonard, who turned up alongside him on the most unlikely occasions, and who, in his absence, exchanged letters with him almost every day. After Lowell's death she was to publish a book in his most fulsome praise, a matter considered scandalous by those in the know apparently. (She sent a copy to Dr. Chant asking that he mention it in the *JRASC*. He declined.) Lowell eventually married (though not Miss Leonard) at 53, taking his bride to honeymoon in Europe. Never one to lose an opportunity, he ascended *en famille* by balloon over London in order to study the visibility of the footpaths in Hyde Park from five thousand feet.

As the 1890s drew to a close Lowell was already famous - or infamous, depending on one's point of view. On the one hand, fan mail poured in from the general public. On the other, most of the experts were outraged. The attack, of course, was generally led by those hill-bound bandits at "the Lick", who lost no opportunity to sneer and jeer at the Flagstaff goings-on, and who all but called the Lowell Observatory Bulletins a pack of lies. Lowell did battle with gusto, but he sorely needed more objective evidence for his canals than mere visual sightings, even if the Flagstaff seeing was so vastly superior to all other.

Obviously a good photograph of the canals would be of immense benefit in putting the enemies to flight, and in 1902 a photographic expert, Carl Lampland, joined the staff for this specific purpose. But emulsions then were very slow, and despite a great deal of effort no really satisfactory results (as far as canals were concerned) were forthcoming. Not that this stopped Lowell loudly proclaiming on several occasions that canals had been photographed, although others, lacking the eye of faith, failed to detect them even on the original plates, and reproduced in print the pictures were so poor as to only give ammunition to the ridiculers.

Obsessed with a passion to be proven correct, Lowell began a search for sites of even better seeing. The Sahara Desert was tried and given up, and for a short while everyone moved to Mexico to observe. With another opposition forthcoming in 1907, Lowell decided to send a major expedition to observe from northern Chile.

The expedition was headed by Lowell's friend, David Todd, an Amherst professor, and included a selection of Lowell's younger assistants, as well as the complete 18-inch telescope. They sailed on a flood of newspaper articles announcing that the expedition would finally settle the whole vexatious question of Martian canals, and the popular press competed ferociously for the rights to publish the first photographs. "The world," reported Lowell gleefully, "to judge from the English and American newspapers, is on the *qui vive* about the expedition.... They send me cables at their own extravagant expense and mention vague but huge (or they won't get 'em) sums for exclusive magazine publication of the photographs."

