



# DAVID DUNLAP DOINGS

VOL. 12, NO. 4 APRIL 30, 1979

## REVISIONISTS' CORNER

It's exam-marking time again (ugh!) - and so we begin this issue with some of the "best" recent material from the Revisionists' Corner file. We hope it cheers you up a bit.

From an AST 210 test ....

*"Tycho's System - Set up by Tycho Brahe where he had the egocentric solar system."*

Does Charlie Farquharson have any kids at U of T?

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From an AST 100 student obviously fed up with the Canadian winter, an essay entitled ....

*"INTRASTELLAR LIFE"*

\* \* \*

Two gems from a recent AST 100 exam ....

*"A circle is a perfect ellipse"*

*"Albedo is a measurement of the possibility of extraterrestrial life"*

\* \* \*

This month's prize, however, must go to the copywriter for *Street Talk*, the hip entertainment section of *The Toronto Star*, for the following notice ....

*"Stargazing honcho of Arizona's Steward Observatory,  
Bart J. Bok is in town to chat up heavenly bodies ..."*

\* \* \*

LETTERS TO THE EDITOR

Dear Editor:

What better place for a recent DDO graduate to meet up with a somewhat-less-recent one than on a flight to Chile? On the CP Air flight down for my recent observing run at Las Campanas I chanced to meet José Maza, who was returning to Santiago to take up his new staff position at Cerro Calan, after completion of his Ph.D. at Toronto in March. After conversation on the plane, he offered to get together with me during the day I was scheduled to spend in Santiago on my return 2 weeks later. This we did, and thanks to him I spent a thoroughly enjoyable Saturday touring the facilities at Cerro Calan observatory built on a beautiful and quiet hill on the eastern edge of Santiago. José already seemed well settled in there even after two weeks, and we spent quite a while talking over his many enthusiastic plans to start several new observing projects -- not only at the three major "foreign" observatories but also with the large Maksutov photographic telescope on a peak northwest of Santiago, which is operated by Cerro Calan and which is apparently an excellent instrument. José seems to be in an excellent position to profit fully from the 10% observing time for Chilean astronomers guaranteed by the legal agreements of the major observatories there, and hopes to start a new era of activity at Cerro Calan.

Later during the day, he and a colleague took me to eat at a superb out-of-town restaurant (elegantly converted from a former monastery!) which no tourist would ever find unaided. We returned to the Mazas' house, which is a small but functional place built at the foot of Cerro Calan and provided by the observatory (to reach his office, José has only a 300-yard walk from his back yard - but most of that distance is vertical!). The Mazas' hospitality was warm, and tea and conversation went pleasantly on into the evening. After a typically maniacal taxi ride across the entire city, I made my plane home with scant time to spare.

Since I had not been at Las Campanas for six years, I naturally was struck by the changes in the operation there. It is clear that the "pioneer" days are almost gone -- the telescope is more dependable and well-equipped, the new Carnegie lodge is beautiful, the telephones and Chevetttes provide easy transportation and communication, the taped music collection is magnificent -- a far cry from the "old days" when traumatic power failures and major telescope breakdowns occurred on a daily (and sometimes hourly) basis, and any real help was 6000 miles away. Rick Crowe is doing an excellent job as resident observer, as have all his predecessors. Except for my usual battles with the weather (I never seem to get what the Chamber of Commerce advertises -- never better than about 50% regardless of season), it was a pleasure to be there again. One particularly engrossing activity was to read the eight years' worth of accumulated "diary" logbook entries kept in Casa Canadiense, which provide a combined historical

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*Editors: Donald A. MacRae and Robert A. McLaren*

document that is almost certainly unique to any observatory in Chile. I hope that someone, sometime, will be able to put together a perspective of the history of Las Campanas based on these fascinating volumes; it makes such interesting reading. Don Fernie, are you listening?

Sincerely,

Bill Harris

Dear Editor:

Isaac Asimov's book "The Collapsing Universe" attributes the discovery of the binary nature of the star in Cygnus X-1 to T.C. Bolt of the University of Toronto. Does the author believe that neither a sentence nor a name should end with a prepositi (sic)?

Sincerely,

AN (sic)

P.S. (sick?) yes!

*BART BOK HERE AS VISITING PROFESSOR*

*Bart Bok has been busy indeed since his arrival two weeks ago. On Tuesday April 17, he gave a colloquium at DDO on the topic "Globules and Star Formation". Then on Friday evening, April 20, an audience of 250 in the Medical Sciences Auditorium was treated to a superb illustrated lecture entitled "Our Big and Beautiful Milky Way". This event was sponsored jointly by the Toronto Centre of the RASC, the McLaughlin Planetarium, and our Department. During the past week, Bart has given us a three-lecture mini-course on Galactic Structure. The first two lectures dealt with the General Luminosity Function and its use in determining the distances and absorptions of dark nebulae. In his third lecture, Bart reviewed the current status of research into the spiral structure of our Galaxy and explained why he is pessimistic about rapid progress in this field. Professor Bok's lectures are not only very informative (Mimeographed notes are provided in many cases) but also extremely entertaining, being liberally spiced with colourful anecdotes and personal reminiscences. In between his lectures, Bart paid a visit to York and gave an interview to radio station CJRT. During the final week of his visit, Professor Bok will give two more colloquia - one on "The Space Telescope and Shuttle" and one on "The Magellanic Clouds" (see Colloquia for times and location).*

## LAS CAMPANAS NEWS

Our new Resident Astronomer at Las Campanas will be Alan Boyce. The competition was really tough and the choice was difficult, but for the first time the committee opted for practical experience over astronomical experience because we felt that such a person was needed at Las Campanas this year.

Alan is a graduate of U. of T. in electrical engineering with some courses in astronomy. He is now employed at I.B.M. and has considerable experience in electronics trouble-shooting, mechanical maintenance and photography, as well as some experience in optics and astronomy. Among his previous jobs he lists a position as assistant to the chief engineer in a small radio station in Stratford, which means that he is obviously used to panic situations to "get on the air".

The present plan calls for Alan to start work at DDO on 1 May to learn as much as possible about observing and about the specific equipment he will be repairing. He will begin work at Las Campanas about 1 July with one month of overlap with Rick Crowe, our current Resident, who will be returning to Toronto as a Ph.D. student.

rG

## CFHT NEWS

Bob Garrison reports that the telescope and mirror are progressing well. First light should be in July 1979. The dedication will be 28 September 1979, and observing will begin sometime after January 1980 with the prime focus only. The Cassegrain mirror has been delayed, so the coudé will be the second focus to be commissioned and that will be ready approximately mid-year.

SAC has made a proposal to the Board of Directors regarding time assignment procedures. If approved, there will be an initial call for proposals to be submitted by 1 September to both NRC and the Project Office. After receipt of feasibility reports (from Project Office) and referee's reports, the time assignment committee will meet in early November. By then it should be clear what instruments will be ready and when.

A number of additional instruments were recommended, including Holographic gratings, an HF filter for radial velocity work, and a small CCD array from Fairchild.

P O T P O U R R I

*Karl Kamper* has received a status-only appointment as Assistant Professor in the Department of Astronomy. It appears that this happy development was triggered, at least, by the discovery of Asteroid Toronto. Dean *Kruger* attended the reception announcing the discovery and on hearing of Karl's contributions to the Department, suggested the appointment in recognition. This will permit Karl to apply for research grants.

*Phil Kronberg* was in Charlottesville on NRAO business during the week of April 16 and then made a two-day visit to the 36-ft millimeter-wave facility at Kitt Peak. Phil returned to Charlottesville on April 29 for the annual meeting of the AUI Visiting Committee for NRAO.

*Bob McLaren* and *Dennis Crabtree* were at KPNO April 9-17 making 10- $\mu$ m heterodyne observations of IRC +10<sup>0</sup>216, VY CMa, and VX Sgr in collaboration with *Al Betz* of U. C. Berkeley.

*Bob Garrison* visited Yerkes Observatory to discuss spectral classification problems with W.W. Morgan. He attended the CFHT Scientific Advisory Council meeting in Hawaii 18-21 April (see CFHT News for brief report). He leaves for Chile on 29 April to observe at Las Campanas.

TEN YEARS AGO

*Newcomers to DDO are invariably puzzled by the name "COUNTDOWN" which is often used for our weekly colloquia, particularly those of the in-house variety (colloquia of the out-house variety are called "CHRISTMAS COUNTDOWN"). The Doings of April 30, 1969 offered the following explanation.*

Many years ago when we first started the practice of having a mixed bag of items on our Wednesday afternoon effort (sometimes as many as ten) the Sputniks and the Vanguards were a novelty and there were many jokes about the countdown. (e.g. the little son of a frustrated Vanguard technician who was asked if he could count to ten. "Sure! 10, 9, 8, 7, 6, 5, 4, 3, 2, 1 - Hell!") So, Dr. MacRae suggested that we should count down from the number of items and when we reached 1 the show was over, Hence "Countdown".



THESIS ABSTRACT

*Bjarne Everson completed his Ph.D. requirements late in March and is now an NSERC PDF at Cambridge. Peter Martin was Bjarne's supervisor. The abstract of his thesis is reprinted below.*

"Mass Transfer in Close Binary Systems"

Bjarne Lee Everson

Recent advances in X-ray and ultraviolet astronomy have created an increased interest in the properties of matter which may flow between two stars in a close binary system. Although much attention has been focused upon systems in which the mass-gaining object is extremely compact (such as a black hole or neutron star), it has been suggested that similar hydrodynamic flows may occur in dwarf novae. Since the mass-gaining object in a dwarf nova is less compact, it is more amenable to numerical simulation.

We present a detailed numerical calculation of the gas flow between the two members of a close binary system. The system chosen is one which may be considered typical of that occurring in dwarf novae where a G star near the main sequence is transferring mass toward its white dwarf companion. The temporal development of the physical variables is followed using a numerical difference method applied to the basic equations of hydrodynamics.

Both viscous and non-viscous flows are investigated employing a classical type of viscosity similar to that used in axisymmetric steady-state models. The resulting configurations are contrasted and additional approximations are used to extend the calculations over a longer time frame. Finally, we compare our results with the observational evidence available and comment upon the viability of different theories for the eruption mechanism in dwarf novae.