

EDITORIAL

Spectroscopy at the D.A.O.

On the night of May 22-23, the night during which J.D. changed from 2439999 to 2440000, I had, through the courtesy of Director K. O. Wright (M.A. 1934), the use of the 72-inch telescope with the valuable assistance of staff-member David Crampton (Ph.D. 1967).

I was particularly anxious to observe some 9th magnitude stars at fairly high dispersion and, incidentally, to test the credibility of our Victoria Colleagues regarding the speed of the new all-reflection Cassegrain spectrograph. Mechanically this spectrograph is the progenitor of ours, but within the past year it has been fitted with new optics designed by Harvey Richardson (Ph.D. Physics 1959) and executed by Roy Dancey, the optician in charge of the 150-inch optics. In this arrangement the camera is a 21-inch F/L spherical mirror, and the collimator is a 4-inch, 72-inch F/L off-axis "paraboloid" onto whose surface has been figured the correction for the spherical aberration of the camera, so that the usual Schmidt corrector is eliminated. Another feature is that the mirrors and grating are so tilted that the plate-holder is out of the light beam oncoming to the camera mirror, which means that the plate-holder can be shifted along at right angles to the dispersion so that as many as nine spectra with comparison, or 24 without, can be put on a 1 x 8-inch plate. The grating which is most often used is a 1200 groove/mm replica blazed for $\lambda 4000$, which gives dispersion $15\text{\AA}/\text{mm}$ in the first order. A grating of 300 g/mm can be used with the same camera to give $60\text{\AA}/\text{mm}$ in the first order.

For some reason this spectrograph at $15\text{\AA}/\text{mm}$ is phenomenally fast. Compared to our $33\text{\AA}/\text{mm}$ prism dispersion it is twice as fast - the other night I got good spectrograms of 9th (ptg) magnitude G-type stars in $1\frac{1}{2}$ hours with projected slit-width of $20\ \mu$ and spectrum width of about 0.3 mm; compared to our $12\text{\AA}/\text{mm}$ grating system it is at least two magnitudes faster; compared to the Kitt Peak with similar dispersion used with the 84-inch telescope it is said to be more than a magnitude faster. I can't believe that the elimination of the Schmidt corrector can account for much of this extra speed; I can only think that it arises mostly from the greater efficiency of their collimator. If so there is some hope that we could improve our G12 system by using an off-axis paraboloid as a collimator and rearranging the grating and camera accordingly, - if there is room enough on our optical plate.

There are other great improvements in spectrograph design in the Coude room of the 48-inch telescope, with still others in the works. Our colleagues here are to be congratulated on the continued aggressive exploitation of their telescopes in the spectrographic field. At the moment I think they lead the pack.

STRICTLY PROFESSIONAL

VRO 42.22.01 = BL Lac

In a note last month we referred to John Schmitt's identification of the Vermilion River Observatory radio source with the catalogued variable star. Since then Dr. Schmitt has obtained a spectrogram of BL Lac with the Carnegie image tube on the Cassegrain spectrograph on the 84-inch telescope at Kitt Peak. The spectrum is to all intents and purposes continuous, and so, as might be suspected, BL Lac is probably not a star at all. A better spectrogram is needed to determine its real nature.

Novae

Both Nova Delphini (1967) and Nova Vulpeculae (1968) are being observed regularly spectrographically as well as photometrically. This must surely be the first time in history that two naked-eye novae have been observable in the same part of the sky simultaneously. There will be a nice series of spectrograms of these novae for some ambitious M.Sc. candidates.

New Dispersion for Grating Spectrograph

Gerry Longworth has modified the grating mounting in the 8-inch camera system of the spectrograph to accept a 150 groove/mm. Bausch and Lomb grating which has recently been acquired. The dispersion of this new arrangement will be 108 Å/mm. It should be several magnitudes faster than G40 and better suited for MK classification. The two will be interchangeable.

New Infrared Photometer for the 24-inch

Initial tests of this photometer have been most disappointing in that the sensitivity of the system is very much below expectation. Examination indicates that it is the tube itself which is at fault, and the project will now be delayed while a replacement is obtained.

Was it the Right Star?

Every observer occasionally gets the wrong star. The other day Walter Gorza measured a spectrogram of a so-called secondary velocity standard and found its velocity 20 km/sec different from the average. Fortunately the field had been drawn, and it did not check. The moral: always draw the field. It's something that we too often forget to do.

New Observing Books

Miss Northcott has been engaged in drawing up specifications

for a new order of observing books. Three new columns have been added: one for Program, one for Exposure Meter and one for Quality. Miss Northcott points out that these 24 books, printed and hand-bound at the U. of T. Press are costing \$225, and she hopes that this knowledge will encourage observers to take pains to record the all-important data carefully and neatly. (If you want to see how it should be done take a look at R.J.N.'s own records in books 12 and 13 when she was observing regularly. - Ed.)

Papers submitted during May

- J. Schmitt BL LAC Identified as Radio Source (Letter to Ed.)
- E. Seaquist On the North Polar Spur as a Supernova Remnant.
(Letter to Ed.)
- S. van den Bergh Galaxies of the Local Group

May and June Seminars

Regular Wednesday "Countdowns" have been resumed under the chairmanship of Dr. Anand.

- May 15
"Countdown" Greg Fahiman: "A Coherent Mechanism Model
for Pulsars?"
- Doug Hube: "Galactic Orbits of Moderately
Young Stars".
- May 22
"Countdown" Dr. Roberts: "Report on Pulsar Conference at
New York".
- Bob Chambers: "Galaxy Evolution in Cosmology"
- May 29
"Countdown"
at Scarborough
College Dr. Roeder "Eddington-Lemaitre Universe".
- Hugh Ross "The Polarization of Synchrotron Sources".
- June 5
"Countdown" Mark Naylor "The Application of the Henyey-
Technique to the Problem of Rotating
Polytropes"
- R. Verrault "On the Intergalactic Medium"
- JUNE 11-14 JUNE INSTITUTE 1968
- June 19
"Countdown" Dr. Percy -
Tom Barnes - "On the Origin of Comets"
- June 26
"Countdown"
at Erindale
College Nancy Ramage "More about Miras"
- Peter Jackson "Radio Luminosity Function of Galaxies"

JUNE INSTITUTE 1968, June 11 - 14

Dr. Anand reports that preparations are complete for the June Institute. The speakers are Profs. R. F. Christy, R. P. Kraft, E. L. Schücking and E. A. Spiegel. Forty-nine guests have accepted the invitation to attend. These include 22 Canadians from Laval, Western, Waterloo, Queen's, York, Dominion Observatory, Calgary, Saskatchewan; 27 Americans from Rochester, Michigan, Chicago, New Mexico, Yale, Harvard, New York, Wisconsin and Maryland. Twenty fifty-dollar scholarships to help cover expenses have been awarded to ten American and ten Canadian students. All Toronto teaching staff, graduate students and summer assistants in astronomy are expected to attend and it is to be hoped that many of our colleagues in other departments will take this opportunity to broaden their horizons.

COMINGS AND GOINGS

Peter Hagen and David DuPuy are still at Kitt Peak obtaining photometric and image-tube spectrographic observations to supplement their Dunlap Observations for their theses. Dr. Schmitt was there April 22 - 25 as noted earlier.

Miss Northcott, Dr. Heard and Dr. Percy attended the May 17-20 General Assembly of the R.A.S.C. at Calgary, the two last mentioned presenting brief papers on "The Spectrum of Nova Vulpeculae" and "Photoelectric Photometry from Downtown Toronto" respectively. Dr. Heard went on to Victoria for a short observing session. John Percy also went on to Victoria for a visit.

Mrs. J. Lehmann is spending a month's holiday touring England and Scotland. She is also visiting with relatives and hopes to say hello to Bill and Vickie if time permits.

DEGREES

John Schmitt was awarded his Ph.D. at the University of Michigan on April 27.

John Percy will receive his Ph.D. here on June 6.

B.Sc.'s were granted to David Lindop, Rob MacDonald and Peter Martin in the Astronomy Division of the M and P course. Also, a B.A. Sc. in Elec. Engineering was awarded to Jack Winzer. All these students received First Class Honours.

Mr. Walter Gorza will also receive a B.Sc. at the spring convocation as he graduates from the General Science Course.

AWARDS

David Goodenough and Peter Jackson were awarded NRC bursaries.

PROMOTIONS

On April 1, 1968, John Percy was promoted to Assistant Professor in the Department of Astronomy and in Erindale College.

APPOINTMENT

Dr. Roeder has been appointed as a representative of Scarborough College to the University Senate for the next quadrennium.

ARRIVAL

Dr. Stanley Jeffers has arrived to begin tenure of a Post-doctorate Fellowship. Dr. Jeffers recently received his Ph.D. from the University of London for an investigation into the properties of nuclear research emulsions in their application to electronographic image tubes, completed under the supervision of Professor J.D. McGee at Imperial College. Mrs. Jeffers will be joining her husband here in July.

SUMMER ASSISTANTS

The following undergraduates have been employed for the summer:

Peter Chen in the Department,
Jim Newton and Ron Nikaido at the Observatory,
Tan Phuc Nguyen in Radio Astronomy,
Ken Sundquist (Joan Topley's brother) at the Algonquin Radio Observatory.

The following new graduate students have begun working for the summer:

Walter Gorza
Check-sen Chai

ALUMNI

Richard Henry (M.A. 1962) now at the U.S. Naval Research Laboratory, recently "made it" in the Science Section of Time in a story on his investigation of X-rays by Aerobee rocket.

Christine Coutts (Ph.D. 1967) sent DDD a card from Palermo where she was enjoying a holiday.

PERSONAL AND MISCELLANEOUS

It's the season for weddings. Being married next month are:
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Orest Dubas to Thea Muller on June 1 in Montreal ;;

Peter Martin to Mary Elizabeth Cowan on June 1 ,

Mark Naylor to Margot Williamson on June 8 in Sarnia,

David Fort to Karen Frost on June 15 in Toronto.

John Percy is currently "serving a term" as President of St. Andrew's - University Day Nursery. This Nursery is still (in the words of Dr. Clarke) "Fully licensed". It also provides year-round day care facilities for children of members of the university community. If any one you know is in need of such services, please steer them to John Percy.

Mrs. Hogg spoke to the Telephone Pioneers of America on May 4 on "Astronomical Break-through from Telephone Research", and to the Richmond Hill Rotary Club on May 6 on "Astronomy Today".

Miss Northcott and Mrs. Hogg were honoured at a reception held by the University Women's Club for Centennial Medallists.

Dr. Roeder has taken to riding a bicycle to work. There must be some kind of a joke here about time dilation.

Nova Vul is known as Nova Vulgaris at Victoria because of its normalcy as compared with Nova Del. What about the latter? Nova Deleria perhaps?

Tell it like it is.

The following is taken verbatim from a second year student's examination answer:

"Statistically it seems very reasonable that there are a great many more planetary systems. Satelights of Satelights are seen to be the only large bodies which do not have satelights in our system. So it seems reasonable a great many stars could have formed planetary systems during their building. Also the chance of catching a large body or pulling it into an orbit is highly probable with so many particles in space and dead stars breaking up."

Poet's Corner

An anonymous young Ph.D. has submitted the following:

The nova which Alcock first saw
(The new one, in Vulpecula)
Was observed on the night
Before maximum light
By our D.D.O. colleagues. Hurrah!

There once was a fellow named Heard
"Poor English" said he, "is absurd.
The next culprit I hear
Will go out on his ear."
Now no one 'round here says a word.

An equally anonymous old Ph.D. submits this.

When Percy's prosey
All is rosy.
When Percy's versey
Lord have mercy!

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STOP THE PRESS NEWS

The Carnegie image tube has arrived at the Observatory this morning (May 29).