

NATIONAL NEWSLETTER

Editor: NORMAN GREEN

Assistant Editors: HARLAN C. CREIGHTON / MARIE FIDLER / E. R. SEAQUIST

Please submit all material and all Communications to the address below:

The Editor, Newsletter, McLaughlin Planetarium, 100 Queen's Park, Toronto, Ontario

Toronto Centre Holds Teachers' Workshop

One of the most important tasks for astronomers today is to try to improve and expand the teaching of astronomy in the schools. Especially in the elementary schools (where most people learn their astronomy), teachers face special problems: little formal training in the subject, rapid developments (in planetary astronomy, for example), difficulty in finding suitable observing activities, and lack of demonstration apparatus and other material. As a result, the teaching of astronomy is often of very low calibre.

In order to help solve some of these problems, the Toronto Centre, in co-operation with the University of Toronto Department of Astronomy and the McLaughlin Planetarium, held a one-day workshop on "Astronomy in the Classroom". This event, on April 6 at the McLaughlin Planetarium, attracted 125 teachers from in and around Metro Toronto.

In the morning, the teachers divided into two groups. The elementary teachers first heard a practical and entertaining talk by Douglas Paul (Science Co-ordinator, North York) on a unit of junior-level astronomy. They then had a planetarium demonstration by Bill Peters (McLaughlin Planetarium). Meanwhile, the secondary school teachers had a planetarium demonstration, then a talk by Ken Stief (Georges Vanier S.S., North York) on secondary school level astronomy, with an emphasis on co-ordinate systems and motion in the sky. Then there was a talk by John MacBean (Science Consultant, Niagara South) on the use of star charts — using real star charts but imaginary stars! Meanwhile Bill Weller (York University) conducted a small seminar on telescope making, after which Jack Newton (Vice-President, Toronto Centre) conducted a small seminar on astrophotography.

After lunch, the participants came together in the Lecture Theatre for a talk on instruments by Bob Bredberg (Bredberg Optical and Scientific) and a talk on "What's New in Astronomy" by John Percy (University of Toronto). The afternoon ended with a series of short talks on various community resources: by Harlan Creighton (Seneca College Planetarium and on the RASC), Andreas Gada (on astronomy clubs), Bill Weller (on York University Observatory), Ian McGregor (on the Toronto Centre Study Group) and by John Percy (on the David Dunlap Observatory). Throughout the day, the participants had access to the Planetarium bookstore, library, optical workshop and displays. For a lucky few, there were tours to the David Dunlap Observatory and the York University Observatory in the evening — which was beautifully clear.

Organizing a workshop like this was a new experience, and although the workshop was a success, the organizer (undersigned) would do things slightly differently next time. He would also be glad to correspond with others in the country who are planning similar workshops, and who would appreciate some advice.

JOHN R. PERCY
Department of Astronomy
University of Toronto

Daylight Observing of Planets

Have you ever tried daylight observations of Venus? Aside from the challenge of finding the object, the viewing is much more spectacular, as you don't have to put up with the glare. The best plan for naked eye observation is to wait until the Moon is in the sky; then you will have a reference for focusing. Also, if you know the Moon's location (given for each hour in the American Ephemeris and Nautical Almanac), you can give your setting circles a work out. Prefocusing binoculars or telescope the night before saves a lot of headaches if the Moon isn't up. Do NOT try observing near the Sun. Once you have found Venus, Mercury may be tried, if you have setting circles. This is a great exercise to try, but be extremely careful of the Sun. There are various methods for estimating the location of a planet, using the Sun or Moon as a reference point and a few calculations from the Handbook or American Ephemeris. For more ideas, see G. D. Roth "Handbook for Planet Observers" page 106 and J. B. Sidgwick "Observational Astronomy for Amateurs" pages 110 and 113. I have tried locating Mercury twice with no success. Maybe at the next favourable elongation it will be spotted.

LEW MCQUEEN
Winnipeg Centre
– reprinted from "Winnicentrics"

Third Congress I.U.A.A.

The Royal Astronomical Society of Canada, Hamilton Centre, will be playing host to the Third Congress of the International Union of Amateur Astronomers, at McMaster University in Hamilton, from July 28 to August 1, 1975. As well as many fine lectures, papers sessions and demonstrations, there will be tours to local observatories, planetariums and points of interest. The IUAA cordially invites every astronomer, both professional and amateur, to participate in this Congress.

While the Congress is still in the planning stages, it would be helpful to know approximately how many people to expect. Therefore, we would hope that any persons, even remotely interested in attending, would write to us to have their names put on our mailing lists for further information as it becomes available. They should write to:

IUAA Congress
93 Currie St.,
Hamilton, Ont.,
Canada, L8T 3N1

The New Gravity Map of Canada

The third issue of the Bouguer Anomaly Map of Canada (scale 1:5,000,000) will be released on May 15, 1974. Price \$3.00 (rolled or folded) in Canada and the U.S.A. and \$5.00 in all other countries.

Orders should be sent to Canada Map Office, Department of Energy, Mines and Resources, 615 Booth Street, Ottawa, Canada. K1A 0E9. Cheques and money orders should be made payable to the Receiver General of Canada.

Enquiries regarding availability of gravity data used to compile the map should be sent to Chief, Gravity Division, Earth Physics Branch, Department of Energy, Mines and Resources, Ottawa, Canada. K1A 0E4.

The Eye

In a book on optical instruments, I found a spectrum of the response of the human eye. What struck me was the composition of the lens or cornea and the functions of the various parts of the eye.

In humans, the eye is one of the parts to develop first, reaching a size of about one inch in diameter early in life. It is made up of concentric spheres, which become thinner as you approach the front.

The outer sphere, or SCLERA, is the white part of the eye and thins out towards the front where it clears to form the cornea. Inside this is the CHOROID, which carries the blood about the eye, keeping the temperature constant, and maintaining the cells. It is dark in color, which prevents scattering of light inside the eye. The front of the choroid is the iris which regulates the amount of light that enters the eye. At night it opens to as much as 7.5 mm and during a bright day it may close to 2.5 mm, or 3 f/stops.

The inner sphere is the RETINA, which is made up of the receptors of the eye which allow you to see. These receptors consist of rods and cones. The cones sense color and the rods sense black-and-white (intensity). These rods are used to look at dim objects. They are more sensitive to light but lie around the edges of the eye, decreasing in number as you approach the center, where the cones are most abundant. Hence the reasoning for averted vision. By looking to one side of a dim object, the light would fall on a more sensitive portion of the eye.

The lens is made up of two parts. There is a crystalline lens inside a membrane-like-bag made of fibers which slide over each other, deforming the lens shape. The refractive index varies across its section, from 1.373 at the edge to 1.420 in the center. This aids focusing. The cornea absorbs shorter wavelengths of light (ultraviolet) which aids the color correction.

The eye is made up of parts which are comparable to refracting telescopes. Further study into the make-up and operation of the eye will lead to new insight into how to look at objects and how reliable your observations are.

ROB DICK
Ottawa Centre.
– reprinted from
“Astro-notes”

Centre de Québec

L'année 1973 nous a permis de présenter plusieurs conférences toutes plus intéressantes les unes que les autres. Ces conférences étaient données au niveau du public en général et elles couvraient les sujets les plus divers et marquaient par leur appoint. La réponse du public se fit sans cesse grandissante et cela malgré un temps d'arrêt lors de la période estivale.

24 janvier	scéance d'observation minimum de l'étoile double algol
14 février	“La géologie et la composition de la croûte lunaire” conférence par M. Roger Laurent
14 mars	“Projet de recherche du laboratoire d'astrophysique de l'Université Laval” conférence par M. Albéric Boivin
4 avril	“Atome et cité dans l'univers” conférence par M. Larkin Kerwin recteur.
16 mai	“Les pulsars” conférence par M. Alphonse Tardif.

L12

- 6 juin Assemblée générale annuelle du centre de Québec où fut élu le conseil pour l'année.
- 21 octobre visite de l'observatoire de l'Université Laval à St-Elzéar et séance d'observation
- 14 novembre "Comète Kohoutek 1973f" conférence par M. Paul Marmet
- 5 décembre "La mission skylab" conférence par M. José Mathieu

DENIS ALLAIRE,
Secretary

Note: The above report was too late for inclusion in the *Supplement*. Please add to the reports in that publication.

Protection for Maps and Charts

After purchasing a field set of the Skalnate Pleso Charts, I found the cardboard was prone to smudges from pencils, dirt from gloves and other hazards, while working outdoors in darkness and varying temperatures. A spray can of Tuffilm clear spray fixative, available from art stores for about \$2.50, corrected the problem. A couple of thin coats applied to the maps allows most smudges to be removed with a damp cloth, without affecting the chart. Similar clear sprays could be tried. Another method is to use a clear cellulose cover for the map and attach it to a clip board. If the cellulose is thick enough and suitably aligned with the chart, you can plot various objects with a china pencil.

– reprinted from "Winnicentrics"
Winnipeg Centre.