



American Association of Physics Teachers

AAPT Ontario Section NEWSLETTER

Vol. VII No. 1

The Annual Meeting

On June 21-22, 1985, the annual meeting was held at McMaster University in Hamilton. Approximately 115 AAPT members that were on hand were treated to many stimulating presentations.

The invited papers began with a presentation by William Harris, McMaster University, titled "Star Clusters and the Age of the Universe". He described some recent research techniques with results indicating that the current estimate of the age of the universe is 14 billion years (± 2 billion years). John Dobson, of the San Francisco Sidewalk Astronomers, followed with a lively talk called "Cosmological Fossils" in which he argued that gravity, electricity, and inertia are the fossils that can be used to interpret the universe. His theory led to several interesting conclusions, including the statement that protons should not decay. Stuart Smith, Chairman of the Science Council of Canada, gave an enlightening talk on "The Effect of Technology on Canada's Economic Prospects". He strongly advised Canada to place a greater emphasis on knowledge intensive industries to help reduce our dependence on the export of our natural resources. Craig Bohren, Pennsylvania State University, took us on a photographic tour to such fascinating places as Iceland and the Antarctic to illustrate his explanations of the color blue in ice, water, snow, and the sky. In his paper, which was titled "Reflections on the Blues", he showed clearly why scattering and absorption are important when explaining color phenomena in nature. William Goruk, Mohawk College of

Applied Arts and Technology in Hamilton, described the physics courses taught in both the technical and technological programs offered at the college. This information will help high school physics teachers plan their curricula. Wally Pieczonka, from a private company called Linear Technology Incorporated, discussed how the training and education of physics relates to the manpower needs of industry. Eric Svensson, Chalk River Nuclear Laboratories, brought to life his favorite fluid in a presentation titled "Superfluid Helium - A Most Fascinating Material". He supplemented his talk with a movie showing the superfluid action of liquid helium at temperatures below 2.17°K. High school teachers Dave Wright, Brenda Molloy, and Stan Percival presented draft outlines of two courses proposed in the new curriculum guidelines. These courses, called Applied Physics and Technological Science, are intended to help students prepare for courses in community colleges. Denny Pierce, from P.J. Spratt and Associates, described a teaching resource kit called "Focus on Fission - Unlocking the Nucleus". The kit consists of film strips, cassette tapes, a nuclide chart, and a teacher's guide. Merv England and Stefan Dubel, Parkdale High School, demonstrated applications of VELA (Versatile Laboratory Aid), a commercially-available device that can be linked to a computer, an oscilloscope, or a chart recorder.

The interest level at the meeting remained high with a variety of short contributed papers.

- "Measuring Frequency with a Microcomputer", Stuart Quick, University of Toronto
- "An Undergraduate Experiment to test Einstein's Second Postulate", Robert Stone, University of Guelph
- "Using Logo in Teaching Vectors", Peter Scovil, Waterford District High School
- "Millisecond Timing with a Commodore Computer", G. S. Rose, University of Western Ontario

School

- "Is Spinning an Inherent Characteristic of Everything in the Natural World?", E. V. Marathe, Grantham High School

- "Curing Calculatoritis", Ernie McFarland, University of Guelph (Try finding the number 1.000 000 1 to the power 27 on different types of calculators and comparing answers!)

On Friday evening, a sumptuous banquet was followed by one of the invited speakers, more tours of McMaster's facilities, and star gazing with Steve Dodson, from Science North in Sudbury, Ontario, who brought his 56 cm reflecting telescope more than 400 km to the meeting!

Congratulations to David McKay, M.M. Robinson High School, Burlington, for organizing our rewarding meeting, and many thanks to the hosts at McMaster University.

Alan Hirsch

Grade 11 Physics Contest Results

This year the "torch was passed" from Doug Fox, first co-ordinator of the contest, to Don Murphy of Sydenham High School. Don did a great job of effecting a smooth transition - the questions were as challenging as ever. From some 3,000 entries, the top ten were:

- 1st at 100% (our first ever "perfect paper"):
 - M. Rajagobal, Earle Hai S. S., Willowdale
- 2nd at 92%
 - R. Brezina, George Vanier S. S., Willowdale
 - I. Walker, Etobicoke C. I., Islington
- 3rd at 88%
 - M. M. Easson, Gloucester H. S., Ottawa
 - J. E. Fry, Woburn C. I., Scarborough
 - K. A. Gordon, Woburn C. I. Scarborough
 - M. F. Greaves, West Hill C. I., West Hill
 - C. K. Hadlock, Sir Winston Churchill, C. I., Vancouver
 - Y. C. Ngai, Upper Canada College, Toronto
 - J. S. Sachdeva, Toronto French School

Altogether, Don awarded 23 prizes of these 4 went to students at Woburn C. I. in Scarborough and 3 to Sir Winston Churchill C. I. in Vancouver. Congratulations to these schools.

Don is now organizing his 2nd contest, and sends forth a plea for good questions, which are always in short supply. If you have a question (or questions) which you feel would be suitable for the contest, please send them to:

Don Murphy,
Sydenham High School,
Sydenham, Ontario.
KOH 2T0

Like a number of others, my school has been semestered for some time. This has given me some difficulties in handling the S.I.N. and AAPT Physics prize tests - my second semester students had^{not} covered a good chunk of the material and my first semester students had forgotten it or were busy with other things. As you perhaps have, I asked myself - "why can't they have two contests per year - more and more schools are being semestered after all".

Then, as a member of the Section Executive, I saw how much work it is for the Contest Co-ordinator to put together one contest per year.

- (a) A set of 30 challenging but fair questions have to be put together and approved by a number of University Profs.
- (b) Many hundreds of "invitations" have to be sent out.
- (c) Booklets of tests must be sent to the several hundred schools that respond.
- (d) Returned cards must be carefully kept track of and sent in batches to the University of Guelph for marking.
- (e) Winners must be chosen, notified, prizes obtained and sent.
- (f) A set of books must be kept accounting for funds received and expended.

This is a major voluntary commitment on the part of anyone; to ask them to do it twice a year is "beyond reason". To find a second person appears equally difficult and then there is the problem of balancing the two tests.

Perhaps we need to realize that these are PRIZE tests, meant for the best half dozen students in the school who are interested enough in Physics to overcome the difficulties of date. At least, as more of us "go semestered", then, more of us are "in the same boat".

I would emphasize that these are my own views (though the executive shares my feeling that we cannot at this time operate the contest on a "twice a year" basis), and I would welcome any comments or suggestions that you might care to direct to me.

- D. McKay

AAPT (ONTARIO) EXECUTIVE 1985-86

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Executive Profile

Each Newsletter this year will feature a brief profile of one or two members of the AAPT-Ontario Executive. This issue we are proud to present:

1. Ross Hallett - Vice-President

Ross was born in the small town of Nanton, Alberta. As a teenager he developed an allergy to grains and decided that a career other than farming was indicated. So it was off to the University of Calgary for a degree in Chemistry followed by a Masters in Physical Chemistry.

Ross now felt it was time for other places and other branches of science so he took a PhD in biophysics at Pennsylvania State University. From here Ross went to the University of Guelph where he was appointed a full professor in 1982.

His research interests include the scattering of laser light from biological molecules and motile cells; as well as small angle neutron scattering from biological macromolecules, for which he uses the McMaster University Reactor. Ross has published a number of articles relating to computer aided instruction in the American Journal of Physics, an educational interest which led to his involvement in the AAPT-Ontario Executive.

Ross is married with 2 children and enjoys music, hiking and sailing. As Vice-President he is chief organizer of the 1986 summer meeting and will then serve as president in 1986-87.

AAPT-Ontario Summer Meeting 1986

Our 8th Annual Meeting will be held June 13th and 14th at the University of Guelph under the chairmanship of Dr. Ross Hallett, Section Vice-President. It will be preceded by a one-day, single topic workshop on Thursday, June 12th. Mark these dates on your calendar and watch for details early in 1986.

STAO Holds Regional Conference Nov. 23

Physics Teachers in the Toronto area will be interested in the Science Teachers Association of Ontario Region 7/8 one-day conference to be held Saturday, November 23rd at Don Bosco High School, near Islington and Dixon Road in Toronto. Programs for the conference are in most high schools in Regions 7/8; if you have not seen one and would like to, call:

Michael O'Keefe,
Don Bosco S. S.,
416-241-3581

HALLEY'S COMET

A 21-pg. "Guide for Ontario Teachers on Halley's Comet" has been written by Prof. Jim Hunt of the Physics Department of the University of Guelph, and is available free of charge. This timely guide includes articles and student exercises, and will be of interest to elementary and secondary school teachers. Any of the items may be copied for educational purposes, provided that suitable credit is given.

To receive a copy of the guide, write: Halley's Comet, Dept. of Physics, University of Guelph, Guelph, Ontario N1G 2W1, or phone (519) 824-4120, ext. 2261.

Membership Renewals

On your mailing sticker is the date of expiry of your membership; all those who are "paid up" have a date of June '86, any others are in need of renewal. If your membership expired in June of '85 or '84 we are sending this newsletter as a reminder and, hopefully an incentive, but we cannot afford to keep doing so! Please use the attached form to renew TODAY. (If you have renewed, why not give this form to a fellow physics teacher and encourage them to "swell the ranks".)

Membership Form

Name: _____

Address: _____

Postal Code: _____

- Affiliation: Secondary School
 University
 College
 Other

The membership fee for one year is \$5.00

Please send this completed form and a cheque or money order for \$5.00 payable to AAPT-Ontario to:

Mr. Dave McKay,
President, AAPT Ontario,
3027 Balmoral Ave.,
Burlington, Ontario.
L7N 1E3