



### GRADE 11 CONTEST RESULTS

The 1980 trial run of the AAPT - Ontario Grade 11 Contest was a huge success. Here are some of the results.

In order the top ten students were from

1. Eastwood Collegiate, Kitchener
2. Grenville Christian College, Brockville
3. Bluevale CI, Waterloo
4. Clarkson SS, Mississauga
5. Wexford CI, Scarborough
6. Clarkson CI, Mississauga
7. Sir Wilfred Laurier, Scarborough
8. Martingrove CI, Mississauga
9. Belle River DHS, Belle River
10. Bruce Peninsula DS, Lion's Head

The top schools were

1. Clarkson SS, Mississauga
2. Wexford CI, Scarborough
3. Martingrove CI, Islington
4. Bruce Peninsula DS, Lion's Head

Our thanks to all the students and teachers who participated to help make this run a success.

We will be province wide with the contest on May, 1981. Watch for us then and tell your friends. Details will be mailed to all schools in the province.

### NEW CURRICULUM

The Ontario Ministry of Education is hard at work developing a new senior science curriculum. One document will cover physics, chemistry, biology and a new senior general science course.

In the area of physics the structure will include activities, content and skills which overlap like the primary colours to produce a relevance. It is expected that the grade 11 course will consist of core plus optional units and that the grade 13 course will not undergo any drastic changes.

Applied science is a new course to be offered at the grade 11 or 12 general level with equal portions of physics, chemistry and biology. Topics such as food, transportation, shelter, energy, recreation and waste will be addressed from the various subject viewpoints.

We might expect the final version to be in the schools in the fall of 1982. AAPT - Ontario is looking forward to the introduction of this new curriculum and will keep you posted on its progress.

### NEW OFFICERS

During the June meeting at Trent this year a new slate of executive officers was announced. They are listed below. AAPT - Ontario would like to thank Jim Stevens of the University of Guelph for his contribution as member-at-large. We welcome John Earnshaw of Trent to this position and Gordon McKye as our new Vice-President.

Past President	Ernie McFarland, Physics Department, University of Guelph Guelph, Ontario, N1G 2W1
President	Doug Fox, Belle River D.H.S., Belle River, Ontario, NOR 1A0
Vice-President	Gordon McKye, Etobicoke Board of Education, 1 Civic Centre Court, Etobicoke, Ontario M9C 2B3
Secretary-Treasurer	Doug Cunningham, Bruce Peninsula DS, P.O. Box 178, Lion's Head, Ontario NOH 1W0
Member-at-large	John Earnshaw, Physics Department, Trent University, Peterborough, Ontario, K9J 7B8
Section Representative	T. Dean Gaily, Physics Department, University of Western Ontario, London, Ontario, N6A 3K7.

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### ONTARIO SECTION - SECOND ANNUAL CONFERENCE - 1980

The Ontario Section held its Second Annual Conference June 13-14, 1980, at picturesque Trent University, located by the Otonabee River in Peterborough, Ontario.

Meeting Festivities began Thursday evening with a social hour for early arrivals at Lady Eaton College, and continued right through until the close of the meeting Saturday afternoon. Over one hundred of the Section's nearly four hundred members attended the conference.

Friday's program began with a spirited panel discussion, "Physics Education in Ontario: Past, Present and Future". The invited panel consisted of: Jim Stevens, University of Guelph; Jack Wright, The University of Western Ontario; Elgin Wolfe, University of Toronto, and Bill Konrad, Tecumseh Secondary School, Chatham.

Two sessions of contributed papers followed the discussion. At the business meeting, Ernie McFarland co-founder of the Ontario section, was presented with an AAPT pin. After the business meeting, Tim C. Ingoldsby, AAPT Staff Physicist, presented an invited paper "Microcomputers in the Laboratory".

Friday evening's events began with a cash bar on the bank of the Otonabee River, and an outdoor barbeque-banquet. Following the barbeque, participants toured the physics and physical chemistry facilities of Trent University. The building proved easy to locate - it was the only structure on campus with an "Eggbeater" windmill on the roof!

Saturday program events included two more contributed paper sessions, a highly entertaining demonstration free-for-all featuring short demonstrations contributed by section members, and an invited paper, "Quarks, Leptons, Gluons, and All That", by Dr. Nathan Isgur of the University of Toronto.

A listing of contributed papers follows:

- "Physics Principles used in the Resource and Environment Fields", John Earnshaw, Trent University;
- "Mosquitoes and Muscles", Ivars Peterson, Trinity College School, Port Hope;
- "Some Demonstrations re: Center of Mass and Stability", Ernie McFarland, University of Guelph;
- "Re-inventing a Wheel: An Experience with a Lab Project", Ronald Kelly, St. Charles College, Sudbury and Syed Ziauddin, Laurentian University, Sudbury;
- "The Surprising Occurrence of First Digits", Dick Barton, Carleton University, Ottawa;
- "Viscous Damping and Restitution Coefficients for a Glider on an Inclined Linear Air Track", N. Gauthier, Royal Military College of Canada, Kingston;
- "A High School Astronomy Club", Doug Cunningham, Bruce Peninsula District School, Lion's Head;
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- "The History of Physics in one 'Swell Poop'", Doug Fox, Belle River DHS, Belle River;
- "Teaching Energy and Momentum in Grades 11 and 13", Denny Pierce, York Mills C. I., North York;
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- "The Freshman Physics Lab at Western", Tom Stewart, The University of Western Ontario, London;
- "A Flexible Approach for Developing Curriculum Resource Materials for General Level Grade 11 Physics Students", Ed James, Cameron Heights C.I., Kitchener;
- "Experiments in Special Relativity Using Compton Scattering of Gamma Rays", Peter A. Egelstaff, Jenny A. Jackman, Peter J. Schultz, Bernie G. Nickel, and Innes K. MacKenzie, University of Guelph;
- "Astrophotography for Physics Teachers and Students", John Lynialuk, Wiarton District High School.

T. Dean Gaily

### UPCOMING EVENTS

Science Teachers' Association of Ontario  
November 6, 7, 8, 1980  
Skyline Hotel, Toronto      Contact: 4046 Bartlett Ct.,  
Burlington, Ont.,  
L7L 1Z9

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#### AAPT - 1980 SUMMER MEETING - Troy, N.Y.

With official attendance of 475 physics teachers, the Summer AAPT meeting in Troy, N.Y. was the largest meeting ever held by AAPT in the summer. Canadian representation numbered 27 including two members of the executive committee. The four days of meetings began on Tuesday, 24th of June with workshops on microcomputers, student confidence in physics, medical physics and solar energy. At an idea exchange meeting of section officers the poster display from our section created much interest and many favorable comments were received on our obvious success at getting a new section off to a flying start. Three days of invited and contributed papers followed with a wide and sometimes bewildering array of topics covered. Popular sessions on apparatus and teaching demonstrations, physics and sport and computers in teaching were well attended. At such a large meeting as this there is always plenty for everyone and it continues to be my own feeling that the many personal contacts and friendships that arise are the most valuable feature.

The next meeting of the association will be in January 1981 in New York City, followed in June 1981 with the Summer meeting at Stevens Point, Wisconsin.

T. Dean Gaily

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Skyline Hotel, Toronto Contact: 4046 Bartlett Ct.,  
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L7L 1Z9

AAPT - Michigan Section  
November 8, 1980  
Wayne State University, Detroit, Michigan  
Contact: Dr. Wm. Beres  
Wayne State University  
Detroit, Michigan,  
313-577-2769

American Association of Physics Teachers - National  
Winter Conference  
January 26-29, 1981  
New York City Contact: AAPT Executive Office  
Graduate Physics Bldg.,  
SUNY at Stony Brook,  
Stony Brook, NY 11794

Grade 11 Prize Contest - AAPT - Ontario  
May, 1981 (Details will be sent to all schools)  
Contact: Doug Fox,  
Belle River DHS,  
Belle River, Ontario

AAPT - Ontario, Third Annual Conference,  
June 12, 13, 1981,  
University of Toronto, Toronto  
Contact: Gordon McKye,  
Etobicoke Board of  
Education,  
1 Civic Centre Court,  
Etobicoke, Ontario,  
M9C 2B3

American Association of Physics Teachers - National Summer  
Conference  
June 17 - 19, 1981,  
Steven's Point, Wisconsin Contact: As for the Winter meeting

'Autumn! The cool crisp nights with their lengthened periods of darkness coupled to the end of daylight saving time provide an almost ideal climate for astronomy. In the west, as nightfall approaches and the star clouds of Sagittarius and Scutum become lost in the twilight the prominent Fall Constellations of Aquarius, Cetus, Pisces, Pegasus, Andromeda, Aries, Triangulum Perseus and Cassiopeia approach the meridian while the summer skies provide splendid views of the Milky Way star clouds and nebulae those of late fall provide dazzling views of the "open or galactic clusters". These comparatively loose clusters of relatively young stars, containing up to a few thousand members, are located in the spiral arms of our Galaxy. Certainly the Pleiades, and the Hyades, both naked eye galactic clusters in the Constellation Taurus, are impressive enough to the unaided eye but just wait for your first views of them through wide angle binoculars! .... and the double galactic cluster in Perseus when seen in a rich field telescope - wow! In addition to these regular astronomical sights the fall skies will produce 5 meteor showers, a number of occultations including a spectacular graze of Regulus on November 1st near North Bay, numerous conjunctions of the planets with the moon in the Eastern morning sky and a fine planetary grouping involving Mercury, Venus, Saturn, Jupiter with Acturus and Spica on the morning of November 19. I've enclosed a map showing the Fall Constellations as seen from mid Ontario at 10:00 p.m. on November 1st. Clear skies and good observing!

Celestial Events for October

- Oct. 2 Mars 1.0° S of Uranus
- Oct. 5 Venus 0.8° S of the Moon
- Oct. 7 Jupiter 2.0° S of the Moon
- Oct. 8 New Moon
- Oct. 10 Mercury at Greatest Elongation (25°)
- Oct. 16 First Quarter Moon
- Oct. 21 Orionid Meteors (25 per hour) (best viewed after 3:00 a.m. on the 21st)
- Oct. 23 Full Moon - (Hunters' Moon)
- Oct. 30 Last Quarter Moon
- Venus 0.5 N° of Jupiter

Celestial Events for November

- Nov. 1 Spectacular Graze of Regulus near North Bay
- Nov. 3 S. Taurid Meteors (15 per hour) (moonlight interfaces)
- Venus 0.6° S of Saturn
- Jupiter 3° S of the Moon
- Nov. 4 Saturn 2° S of the Moon
- Venus 2° S of the Moon
- Nov. 7 New Moon
- Nov. 15 First Quarter Moon
- Nov. 16 Leonid Meteors (15 per hour) (best viewed in the morning of November 17)
- Nov. 19 Beautiful Planetary Configuration prior to sunrise
- Mercury at Greatest Elongation W(20°)
- Nov. 22 Full Moon
- Nov. 29 Last Quarter Moon

Celestial Events for December

- Dec. 1 Jupiter 3° S of the Moon
- Saturn 2° S of the Moon
- Dec. 4 Venus 4° S of the Moon
- Dec. 7 New Moon
- Dec. 9 Mars 4° S of the Moon
- Dec. 13 Geminid Meteors (50 per hour) (Best viewed after midnight Dec. 13-14)
- Dec. 14 First Quarter Moon
- Dec. 15 Venus 1° N of Uranus
- Dec. 21 Solstice (11:56 AM EST)
- Dec. 21 Full Moon
- Dec. 22 Ursid Meteors (15 per hour) (moonlight interfaces)
- Dec. 29 Last Quarter Moon
- Jupiter 3° S of the Moon
- Saturn 2° S of the Moon

ADVERTISING

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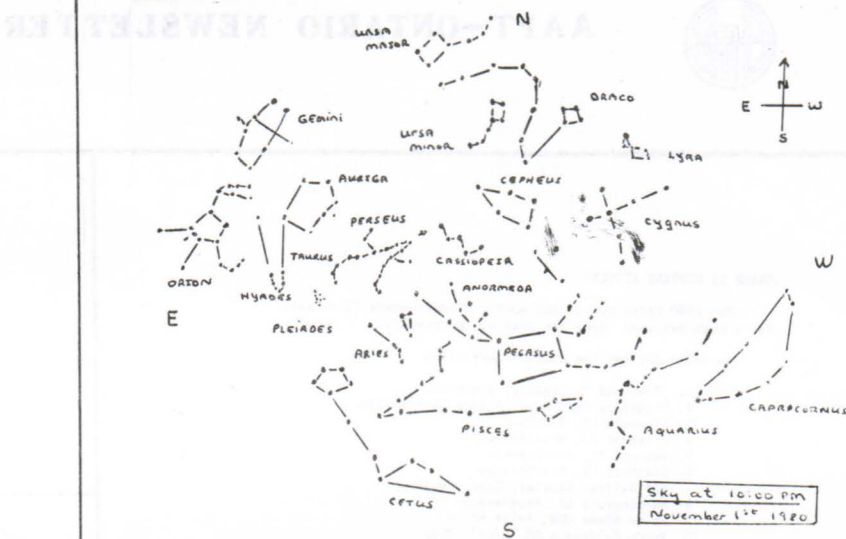
The Newsletter is mailed directly to over 300 teachers of physics in Ontario. We offer the best coverage for your advertising dollar.

GIFTED STUDENTS

Do you know of any special programs/contacts/resources/activities for the gifted physics student? Why not share your knowledge with others. Drop a short note to Doug Fox, Belle River D.H.S., Belle River, Ontario, NOR 1A0.

We are looking for science teachers capable of writing resource materials for classroom use (filmstrips, cassette tapes, 16 mm films . . .) for grades 7-13. Please send brief resume including any writing experience you may have, to:

D. Peirce  
P. J. Spratt & Associates  
212 King Street West  
Toronto, (Ontario)



MEMBERSHIP

Membership figures are constantly growing. If you did not renew either in June as a part of registration for the conference or otherwise, then this might be our last contact with you. After this newsletter non-renewals will be chopped from the mailing list. Send one dollar (with that of a colleague if you would) and your name and address to Doug Cunningham, Bruce Peninsula DS, Box 178, Lion's Head, Ontario, NOH 1W0. Do it today.

Currently we are the second largest section in North America. Only Texas stands in the way of a Canadian coup and we are not that far away.

Coming Spring 1981

PHYSICS  
A Practical Approach  
Alan J. Hirsch

 John Wiley & Sons Canada Limited  
22 Worcester Road, Rexdale, Ontario

## Interference experiments with TV sets

Robert H. Johns

The Academy of the New Church, Bryn Athyn, Pennsylvania 19009

This can be a take-home experiment. All the apparatus needed is two television sets having UHF coverage and a window screen or aluminum foil reflector. The electromagnetic waves used for television transmission are conveniently man sized so that setting up interference effects and measuring wavelengths are easy to do.

One of the TV sets is used as a transmitter. Its local oscillator radiates enough energy to be seen and heard on another set several meters away. It will blank out the white noise on the receiver screen and quiet the between-channel hiss from the speaker. The transmitter's frequency will be about 12 channels lower than what its UHF dial indicates, however. To operate as a transmitter-receiver combination, place the sets a meter or two apart and turn down the sound and picture of the transmitter to avoid getting confusing information from it. With the receiver on UHF and tuned near channel 70 but not receiving any commercial broadcast, tune the transmitter around channel 80 and its signal will be seen and heard. Amazing! Even this much experimenting will be very rewarding and should lead to some messing around by any student or physicist.



Fig. 1. The dark set is receiving electromagnetic waves from the white transmitting set directly and also by reflection from the window screen.

sources. With a regular station tuned in, the reflector can be used to find the direction to the transmitting station if there aren't too many other reflectors nearby.

A metallic reflector near the receiver will produce cancellation (reappearance of noise and hiss) and reinforcement. If the reflector is behind the receiving set, the distance between adjacent cancellation positions is half a wavelength. If the

This has been a lot of fun, and leads to a great many questions. Some basic electronics books and *The Physics of Television* by Eink and Luvers (Doubleday, New York,

#### Celestial Events for November

Nov. 1	Spectacular Graze of Regulus near North Bay
Nov. 3	S. Taurid Meteors (15 per hour) (moonlight interfaces) Venus 0.6 <sup>th</sup> of Saturn Jupiter 3 <sup>rd</sup> of the Moon
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Telephone: 416-598-1082

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TPT, January 1974, pg. 38

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