

# the dialog

*The Newsletter of the Southern Ohio Section of the American Association of Physics Teachers*  
February 2002 Volume 20, Issue 1

MEETING AGENDA  
for the  
**SOS/AAPT SPRING MEETING**  
**Seeing is Believing**  
March 23, 2002

- 7:30 - 9:30 Registration and Continental Breakfast  
9:00 - 10:00 Invited Paper I  
**Dr. Alexei Filippenko**, U. of California, Berkeley  
*Frontiers of Astronomy in the Classroom*
- 10:00 - 10:10 Break  
10:10 - 11:00 Contributed Papers  
Parallel sections if necessary  
11:00 - 11:10 Break  
11:10 - 12:10 Invited Paper II  
**Dr. Robert Teese**, Muskingum College  
*Video Analysis Beyond the Laboratory*
- 12:10 - 1:30 Lunch  
1:30 - 1:50 "How I do it" session  
1:50 - 2:10 Forum: The State Board of Education -  
The Pre-College Science  
Curriculum - "Intelligent Design"
- 2:10 - 2:30 Business Meeting concluded by door prizes  
2:30 - 4:00 Workshop Bob Teese  
*Applications of Video Analysis*  
2:30 - 4:00 Tour of Wittenberg's Facilities including an **astronomy presentation**  
in Weaver Observatory

See our web page for up-to-the minute information:  
<http://www.wittenberg.edu/academics/phys/sosaapt/sosaaptindex.html>

LOGUE

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## Spring meeting

### INVITED PRESENTATIONS

#### VIDEO CAPTURE AND ASTRONOMY EDUCATION

Bob Teese has agreed to come from Muskingum to talk about using video in teaching physics and to lead a workshop, and we will have at least one other invited speaker who will talk about astronomy and perhaps another workshop on astronomy.

#### Web page for the meeting:

<http://www4.wittenberg.edu/academics/phys/sosaapt/sosaaptindex.html>

Detailed information about the spring meeting will be put on the page as it becomes available.

#### Speakers for the SOS/AAPT MEETING

**Dr. Alexei V. Filippenko**, Prof. of Astronomy at the University of California, Berkeley

Alex Filippenko is professor of astronomy at Berkeley. He is the recipient of three distinguished teaching awards. His primary areas of research are exploding stars, active galaxies, black holes and the expansion of the universe. He has won numerous other awards and has appeared in several TV documentaries such as *Mysteries of Deep Space*, *Stephen Hawking's Universe* and *Runaway Universe*.

Professor Filippenko conducts his observational studies at major observatories such as the Keck 10-meter telescopes, the Lick 3-meter reflector, and the Hubble Space Telescope. One of his group's major activities is to use supernovae as cosmological distance indicators. In 1998, his group announced that high-redshift Type Ia supernovae seem to be dimmer (and hence further away) than expected. This led us to conclude that the expansion of the Universe is accelerating, perhaps due to the cosmic "anti-gravity" effect of a non-zero vacuum energy density! Deemed the "Science Breakthrough of 1998" by *Science* magazine, we are now trying to verify this result through detailed studies of systematic effects such as cosmic evolution of supernovae and intergalactic extinction.

Another major research area is the search for the black holes in X-ray binary star systems. In 1995, he and his students used Keck to find a convincing black hole candidate in our Galaxy; it has a minimum mass of 5 suns. Since, then they have found several others, and are now searching for additional examples. The results will be used to study the complex evolution of bi-

nary star systems, the formation of black holes, and the structure of accretion disks around compact objects. The derived masses of the candidate black holes will be useful for strong-field tests of general relativity.

Professor Filippenko will speak to us about using the Frontiers of Astronomy in the Classroom.

**Dr. Robert Teese**, Professor of Physics at Muskingum College

Dr. Robert Teese is a former elementary particle theoretician who is now Professor of Physics at Muskingum College. He has directed three teacher-training projects and has been a staff member or consultant on projects such as Tools for Scientific Thinking, LabNet, and Activity-Based Physics. Professor Teese has worked with video in physics teaching since 1986. He has helped make several teacher training videotapes including *Coral Reefs: Research on Maui*, which was produced by the Wright Center for Science Education at Tufts University. As part of the Activity-Based Physics project, he created the Technical Physics Video Series. Currently, he is co-director, along with Ronald Thornton of Tufts University, of the LivePhoto Physics project.

The paper he will present at the Michigan is titled: **Video Analysis Beyond the Laboratory**. The LivePhoto Physics project is developing a collection of digital video analysis materials for introductory physics courses, using research based development methods that were refined through projects such as Tools for Scientific Thinking and Workshop Physics. These materials will include videos, lecture demonstration sequences, homework assignments, instructor notes and software. In this talk he will describe the project and the materials it has already produced.

Professor Teese has also kindly consented to conduct a workshop at the March meeting. He has titled it: **Applications of Video Analysis**.

This workshop is for physics teachers who wish to try out some unusual methods of video-based motion analysis. We will explore the use of a high frame rate camera system, and participants will be able to make several videos during the workshop. We will also make digital video files that have built in analysis tools. Participants may bring their own movie clips on a 100 MB ZIP disk. The downloads page at <http://livephoto.physics.muskingum.edu/sprites/> has details about movie requirements.

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## Spring meeting

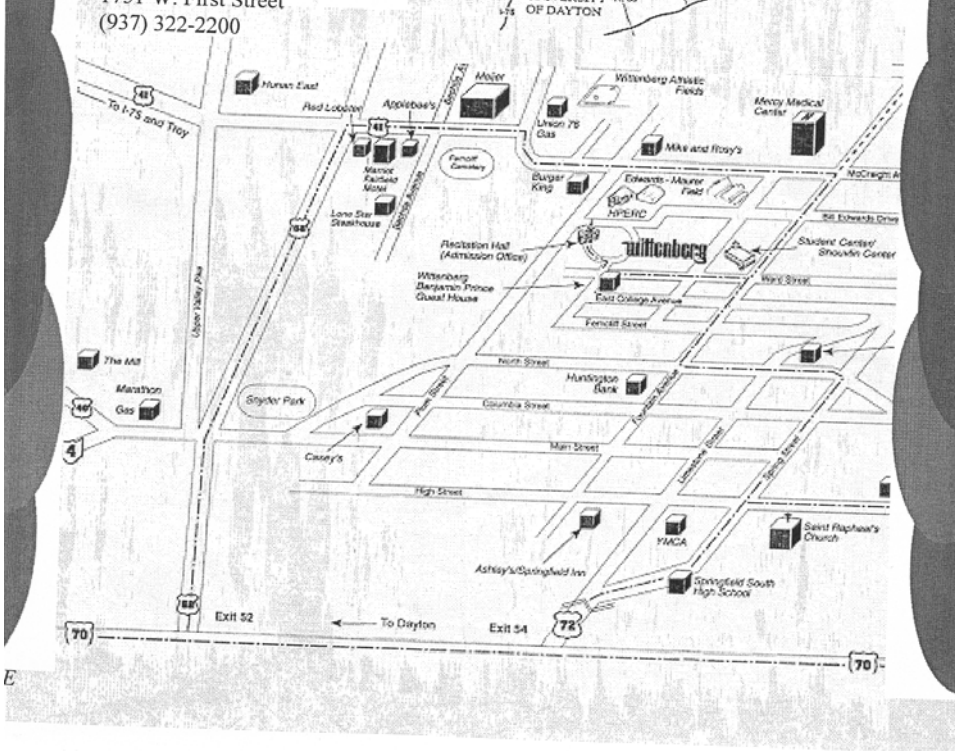
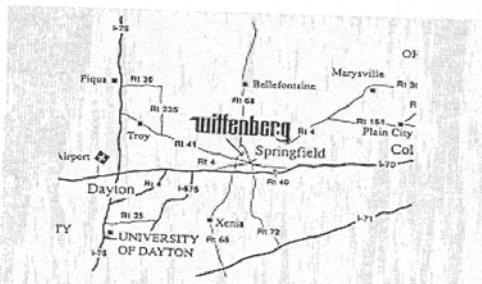
**SPRINGFIELD HOTELS**  
recommended by  
Wittenberg University

*They all should give a Wittenberg discount.  
The final rate should be about \$54. There are additional places, but they are further away from campus.*

Fairfield Inn  
1870 W. First Street  
(937) 323-9554

Springfield Inn  
100 South Fountain Ave.  
(937)322-3600

Country Inn & Suites  
1751 W. First Street  
(937) 322-2200



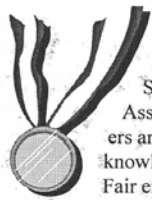
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## IN OTHER N

Thank you to **Bill Kuhlman** for hosting the Southern Ohio Section of the AAPT. The meeting was April 7th at St. Xavier High School and consisted of two invited papers: **Dr. Marko Fatusso**, Xavier University, "A Black Hole at the center of the galaxy" and **Dr. Steve Herbert**, Xavier University, "Whatever happened to high temperature super conductors?" contributed papers: **Cindy Parrott**, Sycamore High School, about micro-gravity experiments with NASA and **Fred Reuter**, St. Xavier High School, about how it is "impossible" to teach AP Physics, and a session where we could share favorite Physics websites. We were also given a tour of their new science building. There were equipment and textbook displays, along with an excellent lunch.



The Ohio Section of the American Physical Society and the Southern Ohio Section of the American Association of Physics Teachers are pleased to be able to acknowledge your superior Science Fair entries.

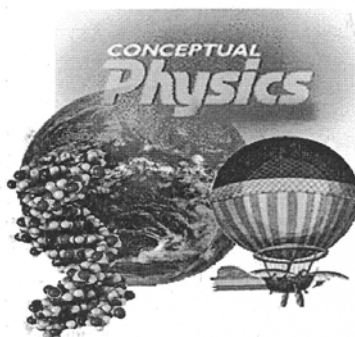
Our eight dedicated judges were

**Gordon Aubrecht, Daniel Banks, William Dollhopf, Daniel Fleisch, Melissa Fu, Darin Marriott, David Pengra, and Michael Ziegler.** They selected the HIGH SCHOOL WINNERS in a two round process.

1. **Ms. Anne M. Zelno**  
Charminade-Julienne HS, Dayton, grade 10  
"Can a white light interferometer detect minute solution concentrations?"
2. **Mr. Andrew S. Cantino**  
Athens HS, The Plains, grade 12  
"Computational evolution of mobility"
3. **Mr. Zahariah E. Grossman**  
Minerva HS, Minerva, grade 10  
"Emission spectroscopy: Anion interference"

Interesting JUNIOR HIGH PROJECTS selected by the judge

1. **Ms. Joline M. Fan**  
Hatings MS, Upper Arlington, grade 8  
"Drag reducing surfactants"
2. **Ms. Elizabeth K. Stirbens**  
Marlington MS, Alliance, grade 7  
"Which material generates a spark the quickest?"
3. **Mr. Evan W. Perry**  
Firestone HS, Akron grade 8  
"How does temperature affect electrical resistance?"



#### Proposed slate of officers:

- Darwin Church** President Elect  
**Julie Haverkos** Vice President for High Schools  
**Pat Shields** Treasurer  
**Fred Reuter** Secretary

#### Future meeting sites were then discussed as follows:

- Spring 2002 Wittenberg University  
Fall 2002 Ohio State University  
Joint with OS/APS  
Spring 2003 Sycamore High School  
Fall 2003 Xavier University (Tentative)

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## NEWS....

Last year, the Southern Ohio Section of AAPT established the John B. Hart Award for Distinguished Service to recognize those members who have made exceptional contributions to the section. The first person to receive the award this year is JAMES F. SULLIVAN.

**James F. Sullivan**, a Professor of Physics at the Ohio College of Applied Science in Cincinnati, is probably the best known person in the Southern Ohio Section of AAPT, and deservedly so. Sullivan is the person who started the section back in the early 1980's. It was Sullivan who did most of the early work of traveling to AAPT meetings to meet with officers of the national organization to find out what had to be done to start a new section for the southern and central Ohio region, and of bringing together enough people locally to make it work. These efforts also included conducting organizational meetings, sending out mailings, and ultimately establishing the Southern Ohio Section of AAPT. With the backing of his dean, John C. Spille, also a recipient of the John B. Hart Award, Sullivan organized the first meeting of the section in the spring of 1983 at the University of Cincinnati. He served as the first president of the section and was secretary for many years following that time. He is presently serving as associate secretary/treasurer. When any of the members has a question about running a meeting, Sullivan is the person to whom we turn. He has been on the Executive Board in some capacity since the beginning, always providing wise counsel to the rest of us when various issues arise. For his tireless efforts and his unparalleled contributions to the Southern Ohio Section of AAPT over nearly two decades, we are pleased to present the John B. Hart Award for Distinguished Service to **James F. Sullivan**.



DIALOGUE

**YOUR article excerpt, or news brief can be here**

To submit, simply send our article, excerpt, or news brief to:

Cindy Parrott  
Sycamore High School  
7400 Cornell Road  
Cincinnati, Ohio 45242  
Phone work:  
(513) 489-0405 ext. 445  
home:  
(513) 398-7134  
Email:  
Parrottc@sycamoreschools.org  
Home:  
Parrc5981@aol.com

FOR MORE INFORMATION, contact Cindy Parrott at the above phone number or email.



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## Spring meeting

### CALL FOR PAPERS

Now is the time, Wittenberg is the place, present your projects, make your case! The spring meeting will be a great opportunity to present the results of your current project, or have one of your students present the work they (and you) have been doing. Our SOS/AAPT meeting provides a collegial forum to present preliminary (or complete) information on a project. This is an opportunity to test the waters and receive some constructive feedback from supportive colleagues.

Typical format for contributed papers is ten minutes for the presentation and two minutes for questions. Additional time for questions will be provided if the situation permits. Overhead projectors and chalkboards will be provided. Your abstract should be in standard APS format. **It must arrive no later than Friday, March 15.** Please send your abstract to:

William E. Dollhopf  
Physics Department  
Box 27  
Wittenberg University  
Springfield, Oh 45501

OR [wdollhopf@wittenberg.edu](mailto:wdollhopf@wittenberg.edu)  
email submissions are particularly encouraged.

If the format is a problem, please let me know (937) 327-7822 or via one of the above addresses and we can work out the details. All abstracts will be published in a future edition of *The Dialog*.

#### SPECIAL OFFER:

We will give you a \$5.00 discount on your registration fee if you submit an abstract. Please make a note if you are submitting an abstract.

### DIRECTIONS TO SPRINGFIELD

Springfield is located 25 miles northeast of Dayton and 40 miles west of Columbus on Interstate Highway 70.

#### When traveling from the EAST of Springfield,

use I-70 (West) toward Dayton. Exit onto Route 68 (North) toward Dayton. Exit onto Route 68 (North) toward Urbana. Then...

#### When traveling from the WEST of Springfield,

Use I-70 (East) toward Columbus. Exit onto Route 68 (North) toward Urbana. Then... exit onto State Route 41 and turn right. You will pass a Marriot Fairfield Inn Hotel and a Meijer Superstore. When the road dead ends, turn right onto McCreight Avenue. Go to the first stoplight and turn right (south) onto Plum Street. You are now approaching campus. Go one block and turn left (the only possible direction) on Bill Edwards Drive. The parking lot is on the northeast corner of Plum and Bill Edwards, and Kuss Science Center is on the southeast corner. The Physics Department is on the top floor of Kuss Science Center.

When traveling from the north or south of Springfield, the simplest way is to go to I-70 and then follow the appropriate directions given above.

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## Seeing is Believing

### Advance Registration Form SPRING, 2002 MEETING

Southern Ohio Section  
American Association of  
Physics Teachers  
Saturday, March 23, 2002  
Wittenberg University

First Name \_\_\_\_\_ Last Name \_\_\_\_\_

Institution \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

|   |         |
|---|---------|
| Registration, SOS/AAPT Member   | \$13.50 |
| Registration, Nonmember of SOS/AAPT<br>(If you join the SOS/AAPT the lower rate applies;<br>see below for membership fee.)  | \$18.50 |
| Student Fee   | \$5.00  |
| Registration, Retired Member  | \$0.00  |
| <b>Deli Box Lunch (Optional)</b><br><input type="checkbox"/> Turkey <input type="checkbox"/> Ham <input type="checkbox"/> Roast Beef <input type="checkbox"/> Veggie<br>PLEASE INDICATE YOUR PREFERENCE<br>(These are substantial lunches.) | \$8.50  |
| SOS/AAPT Membership dues for one year,<br>new or renewal  | \$10.00 |
| Applications of Video Analysis<br>Conducted by Dr. Robert Teese   | NO FEE  |
| Late Fee (For registrations received <b>AFTER</b> March 15)   | \$5.00  |

Please Make Checks Payable to  
WITTENBERG UNIVERSITY SOS/AAPT  
TOTAL ENCLOSED \_\_\_\_\_

Please send this registration form and payment to:

William Dollhopf  
Physics Department  
(SOS/AAPT)  
Box 720  
Springfield, Oh 45501

See our web page for up to the minute information:  
<http://www.wittenberg.edu/academics/phys/sosaapt/sosaaptindex.html>

## Preferences Concerning the National AAPT Meetings

Please complete (a) or (b) (**NOT BOTH**): This sheet represents:

- a. The personal preferences of (your name) \_\_\_\_\_ from the \_\_\_\_\_ section.  
Are you a section officer? \_\_\_\_\_ If so, what is your position? \_\_\_\_\_
- b. A summary of preferences for members of the \_\_\_\_\_ section.

**Venue:** The winter meeting is held typically at a convention hotel or convention center. Past summer meetings typically have been held on college or university campuses.

What is your preference for the venue of the winter meeting? \_\_\_\_\_

What is your preference for the venue of the summer meeting? \_\_\_\_\_

**Geographic Location - Winter meeting:** The winter meeting sometimes is held in a warm location, such as Orlando or San Diego, occasionally in places like Toronto and Philadelphia, and occasionally in places intermediate in terms of winter weather, such as Atlanta. What are your preferences with regard to the geographic location of the winter meeting?

**Geographic Location - Summer meeting:** The summer meeting has been held in diverse locations, from San Antonio to Boise, Denver to Guelph and Rochester. What are your preferences in this regard?

**Meeting dates - Winter meeting:** Recent winter meetings typically have been held in early to mid January, while the 2002, 2003, and 2004 meetings are scheduled to begin January 19th, 11th, and 24th, respectively. What are your preferences with regard to the starting date of the winter meeting?

**Meeting dates - Summer meeting:** Recent summer meetings typically have been held in early August, and occasionally in the latter part of July. In 2002 & 2003, the meetings will be in the first week of August. What are your preferences with regard to the dates of the summer meeting?

**Other comments & concerns:** Please give us any other preferences or comments, positive or negative, concerning our national meetings which may be helpful to those planning future meetings. Thank you! (Please use the back or attach additional sheets, if you need more space.)

Please return this form to: Frank Peterson, fcp@iastate.edu, 515-294-3875, FAX 515-294-6027, Dept. of Physics & Astronomy, Iowa State UN., Ames, IA 50011-3160