

AMERICAN ASSOCIATION  
OF  
PHYSICS TEACHERS

Fall 1995 Meeting  
of the  
Southern California Section

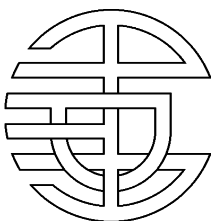
Saturday November 4, 1995  
Mount Wilson Observatory

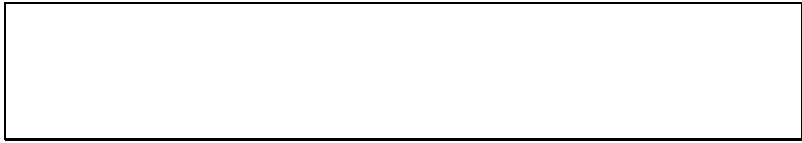
Local Host:  
Gil Clark  
(818) 354-5374

Mary Mogge, Editor  
So. Cal. Section AAPT  
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Pomona, CA 91768

ADDRESSES CORRECTIONS REQUESTED

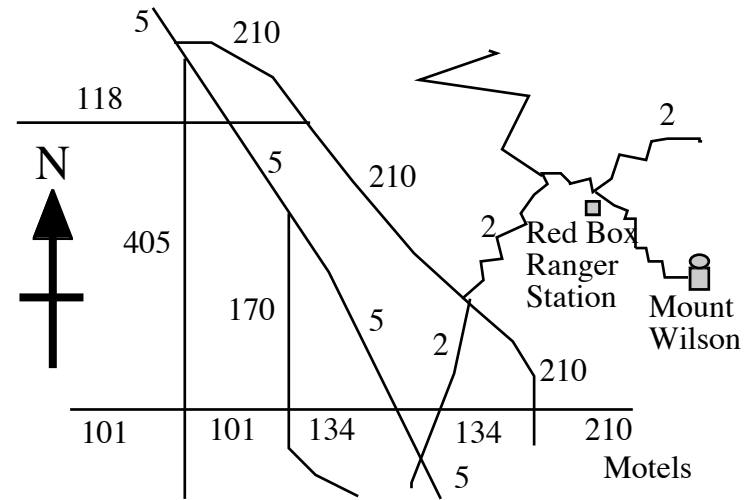
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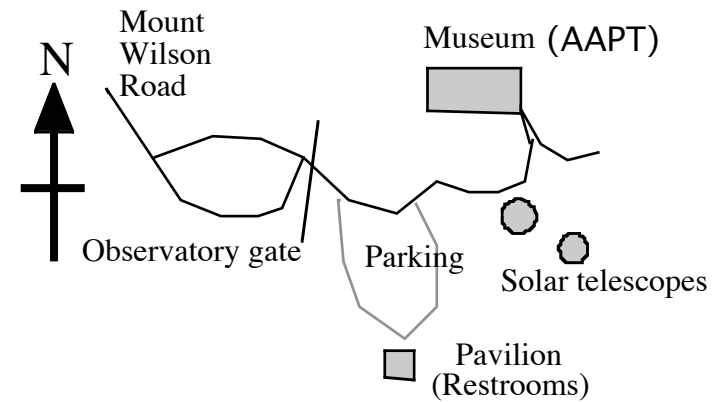


## Freeway and Area Maps

### Freeway Map to Mount Wilson



### Observatory Map



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## Meeting Notes



## Directions

From the 210 Freeway, take Highway 2 (Angeles Crest Highway) and follow the signs. After about 13.5 miles on Highway 2, turn right at the Red Box Ranger Station (Mount Wilson Road) and follow the road about 5 miles to the observatory gate. Parking is located through the gate and to the right in the upper parking lot near the pavilion. The restrooms are located in the pavilion. The meeting will be held in the museum, a short walk continuing along the road from the parking lot.

## Motels

*Best Western Colorado Inn* (818) 793-9339  
2156 E Colorado Blvd., Pasadena Single \$56  
3/4 mile south of I-210, exit Sierra Madre Blvd. 3 blocks west of Sierra Madre.

*Best Western Pasadena Inn* (818) 796-9100  
3570 E Colorado Blvd., Pasadena Single \$48-\$58  
From I-210, exit Rosemead Blvd. S. 2 blocks east of Rosemead Blvd.

*Best Western Pasadena Royale* (818) 793-0950  
3600 E Colorado Blvd., Pasadena Single \$50-\$68  
From I-210, exit Rosemead Blvd. S. 2 blocks east of Rosemead Blvd.

*Comfort Inn* (818) 405-0811  
2462 E Colorado Blvd., Single \$51-\$58  
1/2 mile south of I-210; exit Sierra Madre Blvd.; 1/2 block east of Sierra Madre Blvd.

*Holiday Inn* (818) 449-4000  
303 E Cordova St. Single \$88-\$128  
2 blocks south of Colorado Blvd. via Marengo Ave.

*Travelodge-Pasadena Central* (818) 796-3121  
2131 E Colorado Blvd. Single \$45  
3 blocks west of Sierra Madre Blvd.

## Meeting

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### INVITED TALKS

#### “Telescopes in Education”

Gil Clark

Mount Wilson Observatory

#### “Conduct and Misconduct in Science”

David L. Goodstein

California Institute of Technology

Outright fraud in science is a special kind of transgression, different from civil fraud. When it does occur, it is almost always found in the biomedical sciences, never in fields like physics or astronomy or geology, although other kinds of misconduct do occur in these other fields. Science is self-correcting, in the sense that a falsehood, injected into the body of scientific knowledge will eventually be discovered and rejected, but that does not protect us against fraud, because injecting falsehoods into the body of science is never the purpose of those who perpetrate fraud. That’s why science needs active measures to protect itself. Unfortunately, the government has so far made a mess of trying to do the job. Part of the reason government agencies have performed so poorly in this arena is because they have mistakenly tried to obscure the important distinction between real fraud and lesser forms of scientific misconduct. Fraud and other forms of serious misconduct have been and still are quite rare in science, but there are reasons to fear that they may become less rare in the future. To make matters worse, we scientists are responsible for complicity in presenting to the public a false image of how science works, that can sometimes make normal behavior by scientists appear to be guilty. All of this will be discussed at length.

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## *High School Teachers*

Opportunities for your physics students

### **INTERNATIONAL PHYSICS OLYMPIAD**

High school physics students from the USA compete with students from other countries in the Physics Olympiad. The deadline for applying for the 1996 US Physics Team is **Friday, January 19, 1996**. The initial screening exam will be held shortly thereafter. After competing in a second exam, twenty students will attend a training camp in late May or early June. Five students will be selected from this group to compete in the international contest held June 30-July 5 in Norway.

### **LOCAL SCHOLARSHIP PROGRAM**

The Southern California Section AAPT is again sponsoring a local scholarship program for high school students utilizing the Physics Bowl test. For more information contact Andy Halle (see page 11 for address and phone number).

### **PHYSICS BOWL**

The 1996 AAPT/Metrologic Physics Bowl Contest will be held **Wednesday, April 24**. Entry forms must be received at the national office by **March 26, 1996**. Specialized math and science schools compete in a separate region. First and second year physics students compete in separate divisions, regardless of AP status. A school's score in a division is the sum of the four highest student scores. The 30 first place schools receive a laser donated by Metrologic. First and second-place teams receive T-shirts. All students and teachers who enter receive a certificate of participation. The contest exam consists of 40 multiple choice questions from all areas of physics. It is challenging, with an average score about 50%.

Ads for both these exams will appear in *The Physics Teacher* and *The Announcer* or write the AAPT, One Physics Ellipse, College Park, MD 20740-3845.

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## **Things to do**

### **Join the national AAPT!**

Are you a member of the national AAPT? If not, you are missing out on a good thing! Members receive *Physics Today* monthly and the *AAPT Announcer* quarterly, plus *The Physics Teacher*, the *American Journal of Physics*, or both. There are special low membership rates for students. You can request an application form by sending a postcard to AAPT Membership Dept., One Physics Ellipse, College Park, MD 20740-3845.

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### **Extra Copies of American Journal of Physics?**

Southwest College needs your donation of past issues of the AJP. They have 1950, 1952, and 1959 to present and need all other volumes. Bring them to the Fall Meeting and give them to the Treasurer. Your donation acknowledged in writing. Thanks.

Fernando J. Lopez-Lopez, Treasurer

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### **Extra textbooks?**

Is your office bulging with books you don't want or need? Duplicate or older desk copies? Are you a generous person who would like to share your excess reading material with others? Please bring unwanted books to the meeting, where they will be made available to high school teachers.

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### **Pay your dues**

Support the Southern California Section AAPT. Dues are \$10/year or \$25 for three years. Mail checks to Fernando Lopez-Lopez, Southwestern College—Department of Physics, 900 Otay Lakes Road, Chula Vista, CA 91910. Please include your name, address, city, state, school, home and/or office phone #, and status (faculty, staff, student, or other.) Thanks!

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### **Attend the Spring Meeting**

The 1996 Spring Meeting will be held April 27, 1996 at De Vry Institute of Technology in Long Beach. Local Hosts: Iraj Borbor (909) 622-8866 x205 and Ted Wu (w) (310) 427-0861 x 319.

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### **Attend the National AAPT Meeting**

The 1996 Winter Meeting will be held in Reno, Nevada Jan. 13-18. See *The Announcer* for details. The editor suggests bringing skis. Just a check to see if anybody reads these.

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# Highlights

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## “WORKSHOPS”

Spaces are still available in the workshop on Atmospheric Electromagnetism. Call Fred Carrington (818) 886-4654 to sign up.

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## “SHOW AND TELL”

A constant attraction of our meetings is the “Show and Tell” session. There is still time to get a favorite demo together and share it with others at the meeting.

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## THANK YOU EXHIBITORS!

Many thanks to our exhibitors and door prize contributors, including (as of press time): Brooks/Cole (donating the software package EXP.), Laserpoint (donating a copy of *Hewitt DrewIt* and *Art of Physics*), Texas Instruments (donating a TI-85 graphing calculator), Thornton Associates (donating a pocket laser), and Vernier Software (donating two \$50 gift certificates).

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## DOOR PRIZES!!

As always door prizes, see above, will be given away to those in attendance at a drawing to be held in the afternoon.

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## ORDER-OF-MAGNITUDE QUESTION

What would be the annual cost of reducing the average class size in K-12 in every school in California by one student? Please express your answer in \$. The person whose estimate is the median of all entries received gets first pick of the prizes. The winner must be present at the awards ceremony.

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## LUNCH AND ROUGHING IT

There is no food available at Mount Wilson. If you want to eat, **bring your own**. Brown bag it. There is water available in the Pavilion area. The plumbing in the museum area is old and we have been requested to use the restrooms in the pavilion area if possible.

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# AMERICAN ASSOCIATION OF PHYSICS TEACHERS

Meeting of the Southern California Section—4 November 1995

Mount Wilson Observatory—Host: Gil Clark

**8:30 - 9:30 Tour of Mount Wilson Telescopes** Gil Clark, Mount Wilson Observatory. There will be a walking tour to the 100" telescope visitor gallery, past the infrared interferometer, possibly to the solar tower, and to the 24" remotely controlled telescope (accessible by schools). A second tour will begin at approximately 10:15.

**8:30 - 10:00 WORKSHOP "Atmospheric Electromagnetism" (SCAMPI)**-(Spaces are still available, call Fred Carrington (818) 886-4654 to register.)

**9:00 - 9:30 Registration, Exhibits, Coffee, and Donuts**

## MORNING SESSION

**9:30 Introduction and Welcome**

John Mallinckrodt, Cal Poly Pomona  
Gil Clark, Mount Wilson Observatory

**9:45 "The US Physics Olympiad Program"**

Mary Mogge (one of the coaches of the 1995 team), Cal Poly Pomona

**10:00 "LAPTAG, a Year Later"**

Joe Wise, Crossroads School, and friends

**10:15 Break and Late Registration**

At this time a second tour of the Mount Wilson Telescopes will begin

**10:30 "Using Current Events to Teach AP Physics"**

Art Altschiller, Van Nuys HS

**10:45 "Spread Sheet as a Tool To Show Phase Angle in RCL Circuits"**

Sergio Monteiro, Moorpark College

**11:00 "Boiling"**

Rafael Enfiadjian, recently from The University of Yerevan in the former Soviet Union

**11:15 "The INSPIRE Project—Student Monitoring of Natural and Manmade VLF Radio Signals"**

Bill Pine, Chaffey HS

**11:30 "Show And Tell"**

Greg Darakjian, Jim Anderson, Art Altshiller, Konstantine Papadakis, and perhaps others.

**LUNCH** There are no lunch services at Mount Wilson and the nearest eating places are down the hill. There is a picnic area among the pines. **Please bring your own lunch.**

## AFTERNOON SESSION

**1:30 "What is TY C21?"**

Myron Mann, Los Angeles Valley College and TYC21

**1:45 "Soap Films—Tensile Stress in a Regular Boson Array"**

Walter Ogier, Pomona College (retired)

**2:00 "Telescopes in Education"**

Gil Clark, Mount Wilson Observatory

**2:45 Announcements and Brief AAPT SCS Meeting**

**3:00 "Conduct and Misconduct in Science"**

David L. Goodstein, California Institute of Technology

**3:45** Order of Magnitude Contest Winner and Door Prizes

**4:00** Meeting Adjourns