

# The Optics Institute of Southern California

*Organizing and Implementing the Outreach Effort*

Tuesday October 7, 2003, 2:30 pm  
Education & Training in Optics & Photonics  
Tucson, Arizona

Donn M. Silberman  
Director

The Optics Institute  
of Southern California

A Project of Community Partners - a 501(C)(3) Non-Profit Organization



# Presentation Overview

- Why was the OISC established?
- What is the OISC?
- Who is currently involved in the OISC?
- What is the OISC doing?
- How can you help the OISC?
- Questions & Answers

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# Why was the OISC established?

- Local education community lacks the ability to teach the basics of optics and photonics technologies.
- Local scientific and industrial communities need people knowledgeable about optics & photonics.
- Local optical societies' educational efforts have not been well organized or effective.

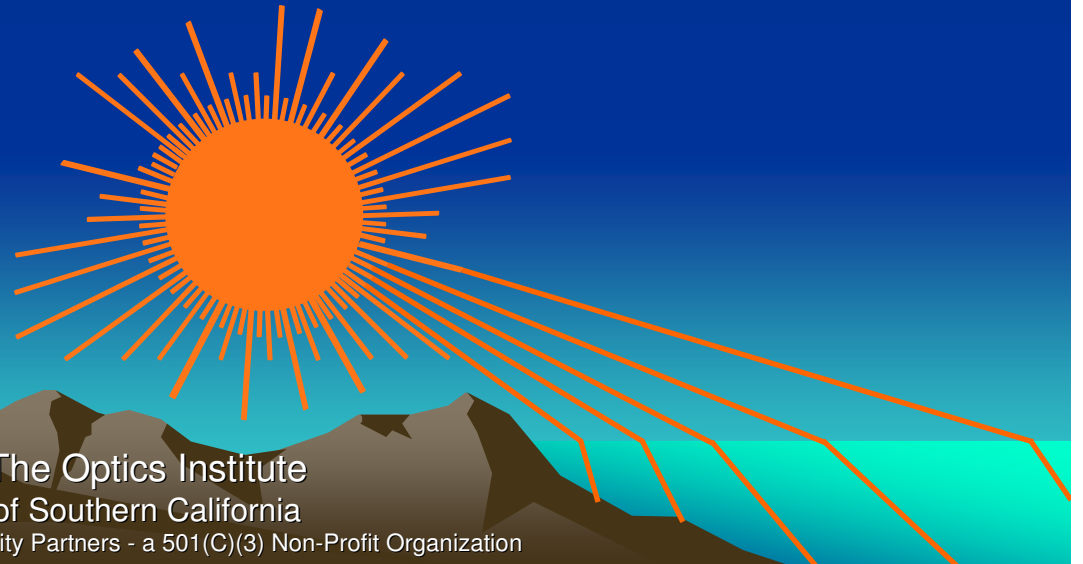
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# What is the OISC?

- A focal point.
- A group that listens to the needs of the local optical science outreach education community and organizes and implements local solutions.



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# MISSION STATEMENT

- Use optics to make science and technology interesting to people in Southern California.
- Bring optics exhibits, demonstrations, presentations and follow-up classroom 'hands-on' materials to K-12 Students and Teachers in Southern California.
- Encourage students to study optics in college and provide paths for them to follow.
- Provide training for people who use optics in their products.

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# Who are the OISC Advisors?

Alan E. Willner	USC Photonics Center	Mark Arenal	Kinematic Engineering
Sandy A. Sawchuk	USC Photonics Center	Mary Stowell	Signet Armorlite
Arnie Bazensky	Schott Glass Technologies Inc.	Mary Turner	Zemax Development Corp.
Bahram Jalali	UCLA EE Dept	Michael Frey	CSULB Astronomy & Physics
Bob Phillippy	Newport Corporation	Michael Tomasello	UC MESA
Breck Hitz	LEMOA	Mike Nofziger	U of A Optical Sciences Center
Brian Catanzaro	CFE Services	Murty Mantravadi	Northrup Gruman Corporation, Retired
Bruce Tromberg	UCI Beckman Laser Institute	Prakash Koonath	UCLA EE Dept
Cheryl Jennings Henderson	Discovery Science Center	Reddy Chirra	Raytheon Systems Company, Retired
Darlene Boyd	UCI Gifted Student Academy	Richard Nelson	UC Irvine EECS Dept
David Cook	Perkin Elmer	Robert E Fischer	Optics 1
Don Welter	A.G. Heinze, Inc.	Robert Hodge	Siskiyou Designs
Duncan Moore	U of R Institute of Optics	Roy McCord	Irvine Valley College
Eric H. Ford	Eidetic Optical Systems	Ryck Daniels	Irvine Valley College
Graham Brewis	Allied Optical	Scott Rowe	Alcon Labs
Janet Yamaguchi	Discovery Science Center	Shari West	Museum Consultant
Jason Briggs	OSA	Sheila Sandiford	SPIE
Jim G. Leatham	Applied Photonics	Sieglinde Wallis	Ohara Corporation
Jim Wyant	U of A Optical Sciences Center	Steve F. Jacobs	U of A Optical Sciences Center
John E. Greivenkamp	U of A Optical Sciences Center	Steve D. Jacobs	U of R Institute of Optics
Kathryn Dickinson	California Science Center	Steve Pompea	NOAO
Kelly Cummings	OSSD	Susan Raffensperger	Northrup Gruman Corporation
Larry DeShazer	Irvine Valley College, CACT	Thomas K. Ha	G&M Compliance, Inc.
Larry Wellen	Advanced Laser Technologies, Inc.	Tom Godfrey	Northrup Gruman Corporation
Larry & Wendy Wolf	General Atomics	Tom Linnart	Think Together
Luan Mendel	Think Together	Toni Wellen	Advanced Laser Technologies, Inc.
Maria Sittmann	Human Resources Consultant	Vengu Lakshminarayanan	Univ. of Missouri St. Louis,
		Wayne Knox	U of R Institute of Optics

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# Advisory Group Purpose

- Ideas & suggestions
- Expertise
- Networking
- Resources
  - Volunteers, equipment, supplies, donations....
- Collaboration
- Event planning & participation
- Funding & Administration (Community Partners)

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# What is the OISC doing?

1. UC Irvine – Gifted Student Academy completed
2. THINK Together
3. Astronomy Outreach – Local & International
4. Local Collaborations
5. **Optics Exhibits** (Marketing to the general public)
  1. “The Speed of Light” @ The Irvine Ranch
  2. Orange County Airport Optics Exhibit
  3. The Discovery Cube Comes Alive
6. Science Fair Projects
7. Space Event
8. UCLA Science Festival – Sally Ride Science Club
9. Fundraising – Community Partners

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# UC Irvine – Gifted Student Academy - Astronomy

- Hands–on for Middle School students
  - Four 1 week classes ~ 20 students each
  - Telescopes – astro & solar
  - Spectroscopes
  - The Optics Suitcase (from OSA Rochester Section)
  - Equipment borrowed from Irvine Valley College
  - Research reports & presentations

Completed

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# THINK Together

- THINK Together operates 13 after school K-12 learning centers in central Orange County (~120 students / center = 1560 students)
- OISC will provide two **Color** programs (K-5 & 6-12) delivered twice during the 2003 – 2004 academic year, once in December and again in April. The Optics Suitcase will also be used for the middle school students, one day of the two week program.
- Each program will run about 40 minutes each day for 2 weeks.
- **We are seeking more volunteer optics professionals to “Adopt-a-Center”**
- All the Center Directors will attend a program training class in early November.
- The Center Directors will then train their volunteers, with the help of the optics professionals in late November.

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Southern  
Skies  
Star  
Party

# Southern Skies Star Party

[www.sssp.org](http://www.sssp.org)

[www.icstars.org](http://www.icstars.org)

[www.astronomicaltours.com](http://www.astronomicaltours.com)

[www.stargardenfoundation.org](http://www.stargardenfoundation.org)



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# Southern Skies Star Party



The Southern Skies Star Party in 2003  
is sponsoring the Bolivian National Observatory at Tarija

**Tarija is in desperate need of many  
ordinary technical components!**

- CCD Imaging Equipment
- Eyepieces Illuminated reticule eyepieces
- Telrads
- Star Atlas
- Video Capture devices & access.
- Solar Filters
- Neutral Density, OIII, HA filters
- Laptop computers
- Drive Correction Stepper Motors
- 120/220 format film
- Red Lights

If you can, please help by donating, or have equipment you would like to contribute to the cause. All contributions are tax deductible through the StarGarden Foundation 501(c)(3) not-for-profit. Members of the SSSP are contributing their equipment and time, training observatory staff in CCD workshops at the SSSP 2003. You do not have to attend the Star Party to help! We will gladly transport your donation to Bolivia. Contact Vic or Jen at [sssp@sssp.org](mailto:sssp@sssp.org) or call 660-747-9458

## Objectives include:

Southern Hemisphere NEO Research. Installation of a fetch program. Completion of equatorial star catalog. Serve as host location for southern hemisphere research available to International Organizations and Universities.

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# Local Southern California Collaborations

- Optical Society of Southern California
- Optical Society of San Diego
- IEEE Laser Electro-Optics Society – LA
- Irvine Valley College
  - Laser Electro Optics Technology Program
  - Center for Applied Competitive Technologies
- Discovery Science Center – Santa Ana, CA
- California Science Center – Los Angeles, CA
- Local companies
- UC Irvine, USC, UCLA



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# “The Speed of Light” @ The Irvine Ranch and other Optics Exhibits

- Confirmed Exhibit at:
  - Irvine City Hall - April 2004
- Potential Exhibits at:
  - Discovery Science Center
  - John Wayne Airport - Fall 2005
- Why??
  - Famous optics experiment took place locally
  - Michelson Ave is main entrance to airport
  - Increase public awareness of optics
    - It's way beyond eye glasses!!

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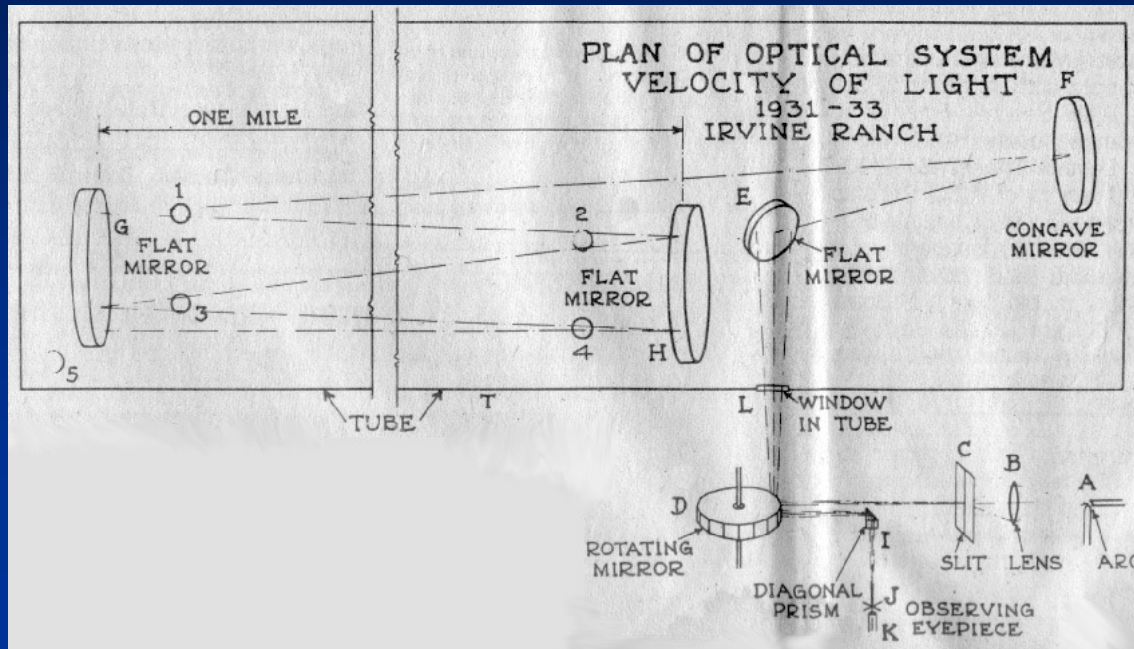
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# The Speed of Light

An Exhibit at Irvine City Hall  
Coming April 2004

Celebrating over 70 years of High Technology Research  
And Innovation in Optics and related Sciences in Southern California.



## Exhibit to include:

- Scale model of original plan
- Modern version of experiment
- Explanatory display panels
- Related science display panels  
(Panels are 10' tall x 6' wide)

## The Michelson Speed of Light Experiment at the Irvine Ranch

$C = 299,792.4562 \text{ km/s (+/- 1.1 m/s)}$

Sponsorships are available.

Contact OISC Director Donn Silberman or visit  
our web site at <http://oisc.net>

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# OC Airport Exhibit Spaces

Fall 2005



30 Wall display cases near the gates  
12' wide x 6' tall x 3" deep



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# OC Airport Exhibit Spaces



4 free standing cases  
38" x 38" x 18" tall near food court

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# The Cube Comes Alive!!

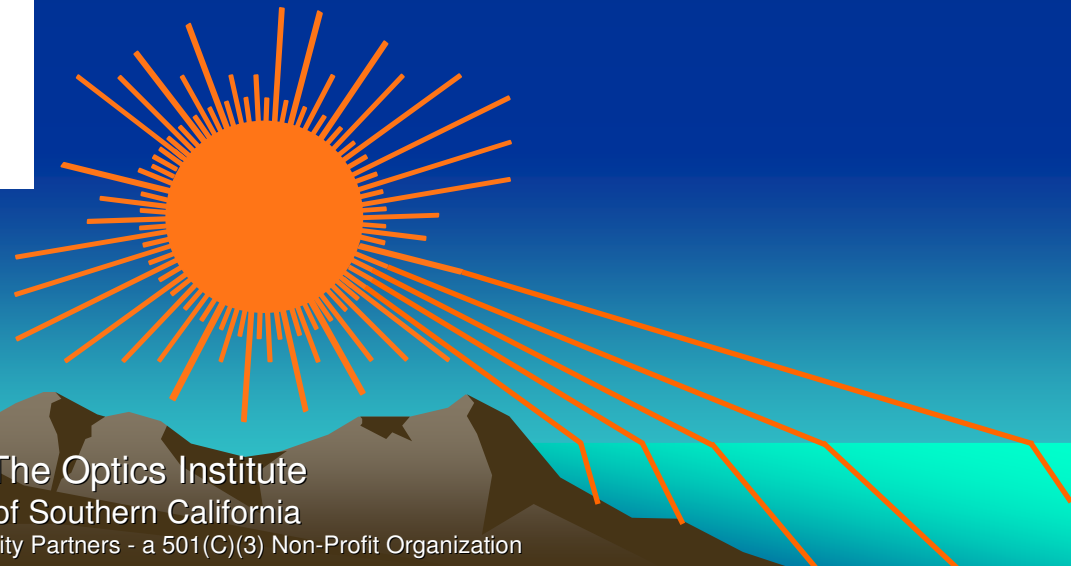


Real video images using new scanning technologies from Advanced Laser Technology's View Beam Company.

A project to be initiated later this fall!

<http://www.advlasertech.com/viewbeam.htm>

More details on this at the table top exhibit!



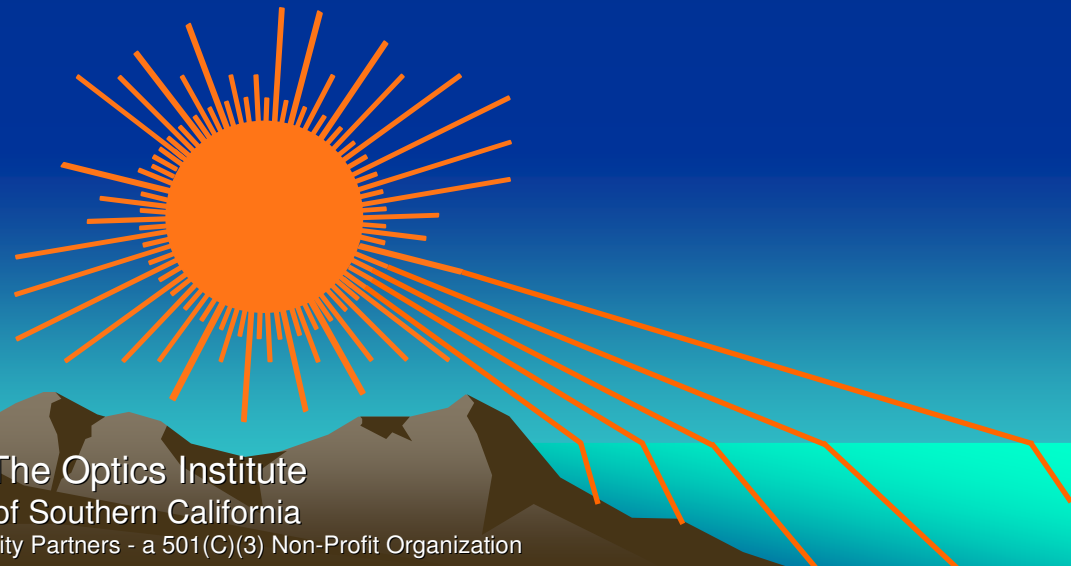
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# Science Fair Projects

- Develop project concepts
- Contact Science Fair project companies



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# Space Event – A Traveling Exhibit



A request to provide hands-on lens activities to have students, teachers and parents make simple telescopes.

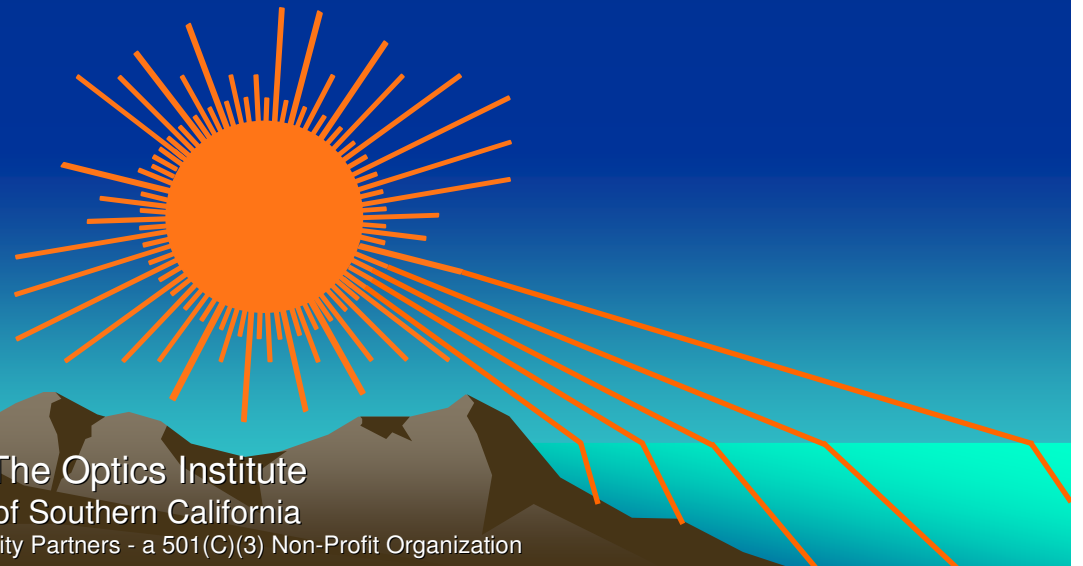
Pacific Science Center  
Seattle, WA

The OISC will provide lenses and support for this activity.

California Science Center  
Los Angeles, CA

Then on to other  
science centers.

[www.spaceevent.com](http://www.spaceevent.com)



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# UCLA Science Festival



Reach for the Stars



*The Sally Ride Science Club™ presents*  
**UCLA Science Festival** • November 2, 2003  
University of California, Los Angeles, CA

OSSC has been asked to participate.  
OISC will help with the Optics Suitcase and other demonstrations.  
IEEE-LEOS Los Angeles Chapter will also participate.

<http://www.sallyridefestivals.com/03ucla1102/index.shtml>

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# How Can You Help?

## Donations

Examples of donations to be contributed by Members from each category:  
(Donations can be contributed in cash / volunteer time / materials / facilities / exchange services and combinations.)

Individual contributions  
On-Line donations



## Societies & Foundations

Grant funds

## Organizations

Recognition plaques on exhibits supported by OISC

## Institutions

Volunteer time to advise OISC staff & members

## Government Agencies & Schools

Provide teachers, students & facilities for OISC sponsored events

## Corporations

Provide low cost materials for student hands-on project kits

## Associates – Consultants

Provide expertise to OISC members at reduced fees

## Individuals

Volunteer time

## Major Fundraising Campaigns

### Sponsorships Available

#### Optics Exhibits @

- Irvine City Hall
- OC Airport
- Discovery Cube

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# Advisory Board Members and New Committees

Chairperson - Donn Silberman  
Vice Chairperson- Vasudevan (Vengu)  
Lakshminarayanan

Secretary - Arnie Bazensky  
Treasurer - Larry DeShazer

Finance Committee  
Larry DeShazer  
Donn Silberman

Fundraising  
Larry DeShazer  
Donn Silberman  
Tom Ha

Exhibits Committee  
Susan Raffensperger  
Victor Kardos  
Donn Silberman  
Shari West

Program Development  
Wendy Woolf  
Donn Silberman

Astronomy Outreach  
Victor Kardos  
Ana Maria Silberman  
Ryck Daniels

Personnel  
Maria Sittmann

In the future, when the OISC  
is spun out of Community Partners,  
this Advisory Board will become the Board of  
Directors.

**More Board Members are still needed!!**

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# Thank You

## Questions and Answers



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