

From the President R. Reddy Chirra



In October, we had an interesting talk on intellectual property (patents) and a great educators' day with a number of science teachers from Southern California Schools. On behalf of OSA and OSSC I personally thank them for taking time to attend and learn about optics. Each teacher took a note book with demonstrable experiments and teaching tools.

Continuing from last month the subject of The Power of Light. Move over Electronics to make room for Photonics. Telecom's cutting edge technologies mingle lasers, crystals, fibers and detectors. Dr. Wayne Knox (Professor and Director at Institute of Optics, University of Rochester and formerly of Lucent Technologies) will be bringing us a talk on Bits, Bytes and Monster Terabits at a later time. Shortages in work force and shrinking enrollment in engineering science programs guarantee us good future. But the challenge is where to get new work-force. From the Educators' day attendees, we

gathered Optics Education in current School Science Programs is very limited. As parents, we should communicate this to our Legislators and Superintendents of Education to include Optics as a major thrust into the future.

We extend our deepest sympathy to our webchair Eric Fest on the loss of his father.

For the asking: George Gregory retired from Optical Instrument Business. He has lots of lenses, prisms, some loose and some assembled. Any kids, teachers or young experimenters. Please call George at 818 762-1859.

Employment Opportunity: SOTA Precision Optics is looking for an opto/mechanical engineer. For details call 714 532-6100

From the HISTORIAN Tom Godfrey Coauthored by Peter I. Lippman



Several years ago I was gathering information on the OSSC Fellows after being named Historian. I found that Roland Hawes was living in Monrovia, with his second wife, Mary. I enlisted help from OSSC Fellow Al Shurcus, as Al knew "Roly" when Roly was still R&D vice-president at Cary Instruments. My first Profile of Hawes was brief as I had little information about him. Roly's technical papers were donated to the Smithsonian when he and his wife Mary moved to be closer to Mary's daughter, Colleen Jackson. Katherine Miller, Roly's daughter, prepared his papers for transmittal, and found that the Smithsonian National Museum in Washington D.C. is extremely interested in collecting documentation of the founding of the technical instrument business, both through donation of such personal papers and preservation of early instruments. In the process, she forwarded to me Roly's detailed resume AND an obituary he had written when his longtime boss, Howard Cary, died! Howard Cary was President of Cary Instruments in Monrovia, and was the first President of OSSC. Mrs. Miller gave me copies of both documents and also portraits of both men; which is how I was able to write the OSSC Fellows Profiles, for Hawes and Cary, which are now posted at www.osscc.org

When Roly died, Katherine set up the Roland C. Hawes Memorial Fund to support the City of Hope Starbright Project -- which brings us to the point of this column:

Roland C. Hawes Memorial at City of Hope, Duarte, CA
Roly's name was added to a memorial plaque unveiled Oct. 19th in the Pediatrics Department of the City of Hope, recognizing several donors who have established funds for a computer system that is used by both outpatient and inpatient kids. Called "Starbright World", the system was developed by the famous Steven

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Images Newsletter

Deadline for contributions is the date of the monthly meeting preceeding the next issue. Send information to:

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Spielberg. It is a special kids' internet-like isolated hardware/software system for playing games, teaching them about their disease, and linking up for chat with kids in many other hospitals, as well as at the City of Hope, who have the same afflictions and may be at the same stages of treatment. My contribution, combined with those from a group of Roly's former coworkers at Cary Instruments and others, had totaled over \$10,000, which the City of Hope recognized by adding Roly's name to the plaque. Roly had volunteered extensively at City of Hope, working up custom instrumentation as well as calibrating and maintaining some equipment that he found there.

A modest ceremony at the hospital began with comments by Pediatrics Division Chairman Dr. James S. Misner, describing the philosophy and the work of his group.

Miro Rusnak, a biomedical-instrumentation technician who actually had worked with Roly back in Roly's volunteer days, described a carousel-type sample changer, nicknamed "ELISA", which Roly had designed and Miro had put together. Miro had been with the City of Hope for 30 years.

Toni Carrera-Irwin, who helped design the kids' Starbright World computer system about 16 years ago, described what it does and how it's used.

In a tour of the Pediatrics Division and some related facilities, our group was led by Donna Pearce and by Roly's great-granddaughter Kai Miller, age 3.

David and Katy Miller treated the attendees to lunch at Mimi's Café in Monrovia before the tour & dedication. Participating in the event were:

- Roly's widow, Mary Hawes, also the widow of Cary veteran Carl Williams;
- Mary and Carl's daughter Colleen Jackson;
- Roly's daughter, Katy Miller, and her husband David Miller;
- their daughter Cheryl Jo
- their son Brian, and his daughter Kai;
- Tom Godfrey, OSSC Past Pres. and Historian;
- Cary receptionist Joanne Tober;
- Cary scientist Ahmad Abu-Shumays, and his wife, Abaan;
- Cary scientist, techwriter and patents manager, Peter Lippman; and
- the Millers' longtime family friend, Mary Krishnamurty.

In connection with Roly's inclusion on the Starbright plaque, donations in his name can still be accepted and will be applied to maintenance of the system. The Starbright Foundation has an internet web site with details about the computer system at <http://www.starbright.org/>



Katie (Hawes) Miller & Mrs. Roland (Mary) Hawes in front of plaque honoring Roland C. Hawes.

more photos: <http://www.mcn.org/k/peterpat/RCH.html> and
<http://pages.sbcglobal.net/peterpatnter/RCH.html>

Wednesday, November 14, 2001

Cooling the Optics and Focal Plane using Pulse Tube Cooling

By Dr. Emanuel Tward, TRW Inc.

Abstract

Now that the optical design is complete and the detector is picked, how are you going to cool the focal plane and optics? Maybe you should have thought of this before you finished the optical design because you might have to change it. Maybe this is a space application or a mission that requires high reliability or maintenance is out of the question. Pulse Tube cooling may be the answer. Temperatures as cold as 4 degrees K or lower are achievable with this technique. Acoustics do all the work in the no moving parts cold head. Loudspeaker like compressors produce the acoustic wave in the space coolers. Air conditioning compressors are used for ground based systems. Even heat driven, no moving parts thermo-acoustic compressors are used in development units. In my talk I will discuss the coolers, why and how they work and even some space optical payloads that use them

Biography

BSc, MA, PhD, Physics, University of Toronto 1963, 1964, 1967 Dr. Tward joined TRW in 1988. Since that time he has been the business area manager of the cryocooler program and has managed a number of cryocooler development and flight projects. He has been project manager of the development of a multistage cooler for SSTS/SVS, a miniature Stirling flight cooler, the 150K PSC cooler for AFPL, the Brilliant Pebbles miniature pulse tube cooler, the SBIRS LOW flight coolers the 95K High Efficiency Cryocooler, and is currently the manager of the development of the GIFTS cooler. Before joining TRW, Dr. Tward was chief executive officer of SpectroSonex, a start up company developing a novel spread spectrum medical ultrasound imager. From 1979 to 1986 Dr. Tward was supervisor of the Low Temperature Physics Group at the Jet Propulsion Laboratory. Prior to that Dr. Tward was an Associate Professor of Physics at the University of Regina and was active in research in magnetic resonance and the development of gravity wave detectors.

Next Meeting

Date: Wednesday, November 14, 2001, 6:00 PM, Happy Hour; 7 PM, Dinner; 8:30 PM Speaker.

Cost: Dinner: \$20. Speaker only: No charge.

Speaker: Dr. Emanuel Tward

Topic: Cooling the Optics and Focal Plane using Pulse Tube Cooling

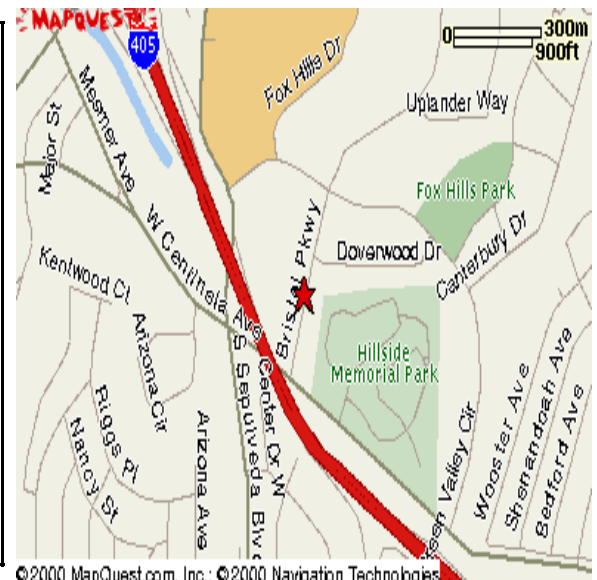
Location: The Ramada Plaza Hotel

6333 Bristol Parkway
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Tel: 310-484-7000

Reservations: preferably by e-mail to our Arrangements Chair, Ashley Danial at ashley.danial@trw.com or call (310)812-4608

Menu Choice: Chicken Piccata, London Broil, or Vegetarian Meal
For current updates, directions and map, please visit our website at www.ossoc.org.



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