Welcome to Physics 530 Laser Physics

Dear UW Physics MS/GNM Student:

As we announced in June, we will hold a fall orientation meeting for students in the Physics MS degree program, and GNM students taking our evening classes. A buffet dinner is included!

(for menu, please see https://depts.washington.edu/emsp/menu11103.txt)

If you can't come in time for the dinner session, please join us at 7:00 pm for the orientation and Q&A session, during the regular evening class session in A-110 PAB. We'll do the whole show twice, so students enrolled in Tuesday evening classes can attend without having to come to campus an extra night.

Monday, October 3
6:00 pm in room C-520 PAB (dinner and social hour)
7:00-7:30 pm in A-110 PAB (Phys 543 classroom): orientation and question time.

Tuesday, October 4
6:00 pm in room C-520 PAB (dinner and social hour)
7:00-7:30 pm in A-110 PAB (Phys 530 classroom): orientation and question time.

So, **please RSVP as soon as possible**. The caterers need to know how many are coming.

Just return this email, checking off which session you will attend below, and whether you will arrive in time for dinner.

Please check one below, and reply to emsp@uw.edu, or phone 206-543-2488.
(No need to RSVP unless you want dinner!)

YES, I want to join the dinner on the night selected below.

___ Monday October 3

___ Tuesday October 4

Menu for Physics MS buffet dinner

Parmesan-crusted chicken breast with basil marinara sauce

Three-cheese vegetable lasagna

Roasted seasonal vegetables

Antipasto Platter: a selection of cured meats including sopresatta, calabrese salami and prosciutto, ripe melon slices, imported olives, baby artichokes, marinated mushrooms, and roasted asparagus

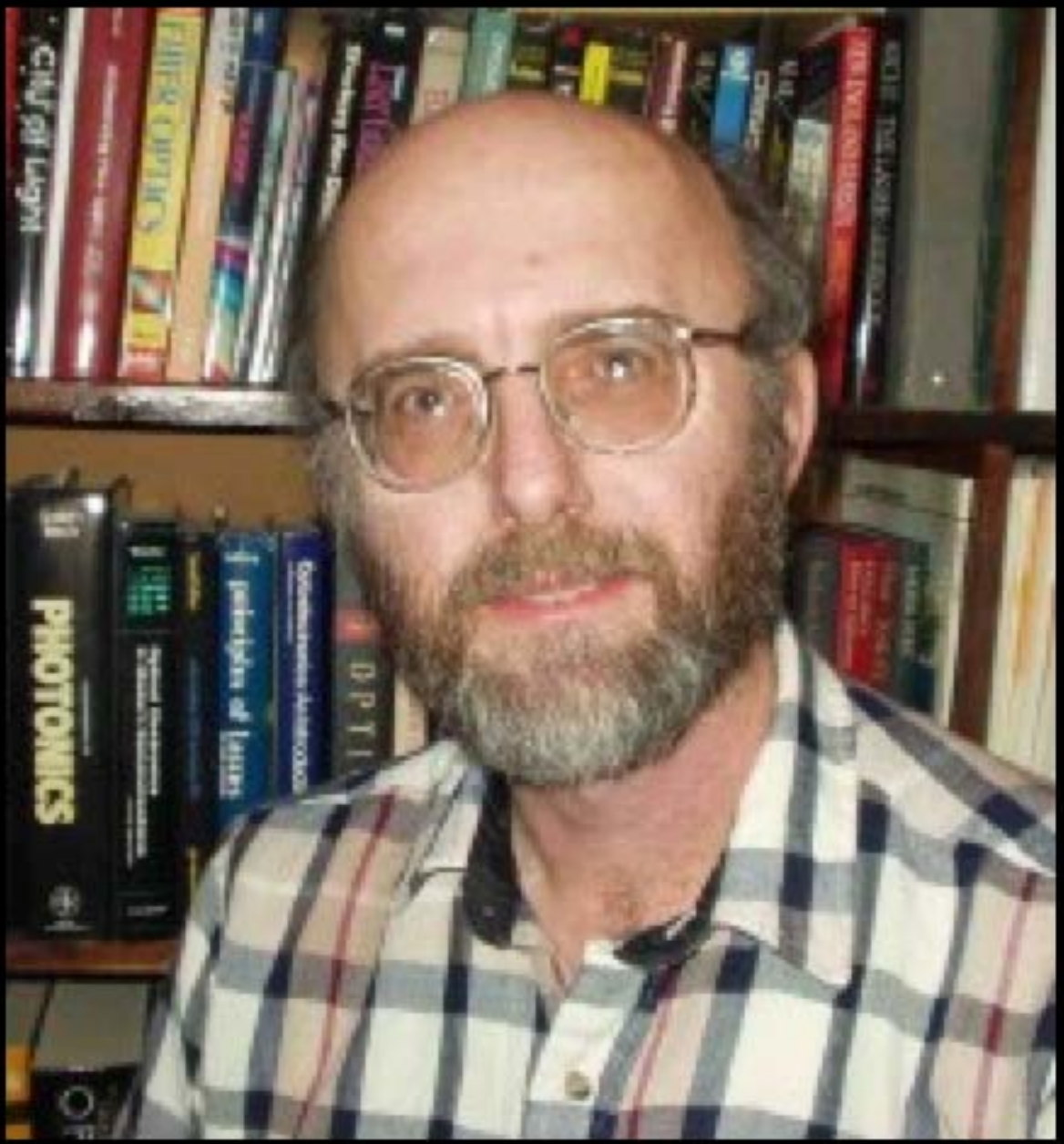
Organic mixed greens with house balsamic vinaigrette

Toasted garlic bread

Tiramisu: coffee-soaked sponge cake layered with sweet mascarpone cheese and a sprinkling of cocoa powder

Fresh-brewed organic Fair Trade Certified shade-grown regular and decaf coffees

Organic and assorted herbal teas


PHOTONICS

Jeff Hecht's Page

http://www.jeffhecht.com/

Google

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Welcome to Jeff Hecht's Page

Welcome to Mars -- Pathfinder photo of the Martian surface

A Few Words of Introduction

As a science and technology writer, I cover many areas, with a particular concentration on fiber optics and lasers. I also offer short courses in fiber optics, and do some consulting on fiber optics, lasers and optical technology. In my copious spare time, I write science fiction. My major activities are:

- Covering and explaining fiber-optic technology
- Writing for New Scientist, Laser Focus World and other magazines
- Writing nonfiction books
- Writing the occasional bit of science fiction/fantasy.

Beam: The Race to Make the Laser

Oxford University Press recently published my latest book, *Beam: The Race to Make the Laser*, which tells how the idea of the laser was translated into reality. The starting gun was a fateful conversation between Charles Townes and Gordon Gould shortly after the Soviet Sputnik launch in October 1957. Their conversation defined the basic goal, which Gould called "light amplification by the stimulated emission of radiation" -- or LASER, a term borrowed from the microwave version, or MASER, which Townes had invented earlier. Townes and Gould each figured out how a laser should work, launching ambitious programs at Bell Labs, TRG Inc., and Columbia University. But the winner of the race was Theodore Maiman, who in 1960 built the first laser around a little cylinder of ruby. His design was so simple and elegant that TRG built their own version within weeks after seeing a press-release photograph.

Books by Jeff Hecht

Understanding Lasers 3rd ed. -- THIRD EDITION NOW OUT *

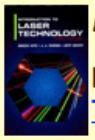
IEEE Press/John Wiley & Sons 2008 (ISBN 978-0-470-08890-6). An introduction to lasers and related optical technology, intended for the nontechnical reader, richly illustrated and with little mathematics. This new edition has been extensively updated to describe the state of the art in solid-state and semiconductor lasers, and a wide range of new laser applications. You can download a special offer to buy at a discount from the publisher, or you can order Understanding Lasers: An Entry-Level Guide from Amazon.com .

Understanding Fiber Optics 5th ed

Prentice Hall, 2005. The latest edition of the standard introduction to fiber optics; over 100,000 copies have been sold. Available Now (ISBN 013-117429-0). In US call Prentice Hall Direct at 1-800-282-0693, or order Understanding Fiber Optics (5th Edition) from Amazon.com

Beam: The Race to Make the Laser

Oxford University Press, New York, 2005. The fascinating story of one of the 20th century's most surprising inventions, from the birth of the idea to the first working laser, and the surprisingly difficult aftermath. (ISBN: 019-514210-1) Order Beam: The Race to Make the Laser from Amazon.com . Inscribed copies are available.

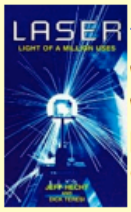


Introduction to Laser Technology 3rd ed *

Breck Hitz, J. J. Ewing and Jeff Hecht IEEE Press 2001 (ISBN 0-7803-5373-0).Order Introduction to Laser Technology, 3rd Edition from Amazon.com . (Note that IEEE members can order at a discount through IEEE)

City of Light: The Story of Fiber Optics *

Oxford University Press, New York, March 1999. (ISBN 0-19-510818-3) A book in the Sloan Foundation Technology series. See my fiber-optic chronology and short overview of fiber history. For near-immediate gratification you can order,City of Light: The Story of Fiber Optics (Sloan Technology Series) from Amazon.com. The revised trade paperback edition (ISBN 0-19-516255-2) includes a new chapter on the boom, the bubble, and the bust is also available - order City of Light: The Story of Fiber Optics (Sloan Technology Series) from Amazon.com .(Inscribed copies available)

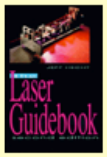


Laser: Light of a Million Uses

with Dick Teresi, Dover, Mineola, NY, 1998 (ISBN 0-486-40193-6) is available from Amazon.com . It is a reprint, with new preface, of ***Laser: Supertool of the 1980s***, originally published by Ticknor and Fields, New York, 1982, paper 1984. (Signed copies of the 1982 trade paperback are available). There also are Japanese, Spanish, Swedish, and Dutch translations.

Vanishing Life: The Mystery of Mass Extinctions, Charles Scribner's Sons/Atheneum, 1993, (ISBN 0-684 19331-0) (young adult). Tells about the five greatest extinctions that wiped out many species on land and in the sea, forever changing the Earth. For immediate gratification, order Vanishing Life: The Mystery of Mass Extinctions from Amazon.com .

The Laser Guidebook 2nd ed McGraw-Hill, New York, 1992 (ISBN 0-8306-4274-9) (1st ed. 1986). A practical guide to commercial laser technology, written for engineers who need to work with lasers. It reviews all major types of commercial lasers, with details on typical performance. Order The Laser Guidebook (Optical and Electro-Optical Engineering Series),from Amazon.com. *



Laser Pioneers **Academic Press, 1991 (ISBN 0-12-336030-7).** Interviews with the scientists who developed major types of lasers, including Nobel Laureates Charles Townes, Arthur Schawlow and Nicolaas Bloembergen, and Gordon Gould, whose laser patents earned him millions of dollars and election to the National Inventors Hall of Fame. To sample the book you can read an excerpt on the great laser race. You can order **Laser Pioneers from Amazon.com**

Science Fiction, Fantasy, and Horror
by Jeff Hecht

My fiction

I write short science fiction, fantasy, and horror when the inspiration strikes. The inspirations may come from daily life, my writing about science, or elsewhere. Once in a while they're prophetic. The inspiration for "On 202" came from realizing I was hearing the voices of the dead over the radio -- this in the 1970s, when rock stations simply played rock, not classic rock, oldies or whatever other sub-genres their marketing wizards have invented. The inspiration for "The Number of the Beast" came from my real-life adventures with conspiracy crackpots and tabloids. "Rehearsals for Retirement" came from watching asteroids and the misadventures of NASA.

I am not prolific, but I do write in a variety of fields, from horror to humorous science fiction. Of late, I've been writing short-shorts, tightly told and often-twisted tales which are challenging fun. Ever wonder what the people of Nikola Tesla's time would have thought of the wireless communications systems Tesla tried to invent? Read "Operation Tesla." Looking for a solution to global warming caused by carbon dioxide? Read "The Greenhouse Papers." Lately I've written a few stores in the "Futures" series of speculations in the scholarly journal *Nature*. They're fun to write, and I hope they're fun to read.

Online at Fictionwise

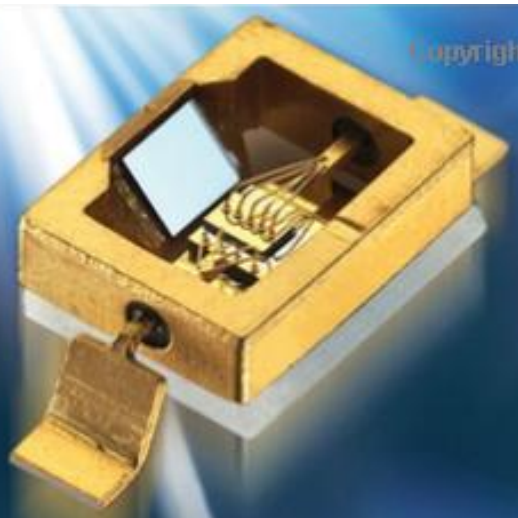
Most of my stories published since 1985 except those originally in *Nature* are available online at Fictionwise.com . Yield to a moment of silliness and chase "Squirrels."Travel back into the past with "Draft Dodger's Rag." Or take a walk on "The Crystal Highway."

My published stories are

- **"The Princess and the P6," Datamation, April 1976**
- **"Lifeboat" New Dimensions 8, Robert Silverberg ed. (Harper and Row, New York, 1978)**
- **"Crossing the Wastelands" New Dimensions 9, Robert Silverberg ed. (Harper and Row, New York, 1979)**
- **"On 202" Twilight Zone, Dec. 1981, reprinted in Year's Best Horror Stories X, Karl Edward Wagner ed., in New England Ghosts,, Frank D. McSherry Jr., Charles G. Waugh and Martin H. Greenberg eds., and in Great American Ghost Stories, Frank D. McSherry Jr., Charles G. Waugh and Martin H. Greenberg eds**
- **"Saratoga Winter" Twilight Zone, Oct 1982**
- **"Extinction Theory" Analog, March 1989**
- **"Boxes" After Hours, Autumn 1990**
- **"Rehearsals for Retirement" Analog, mid-Dec 1990**
- **"Aunt Horrible's Last Visit" in Vampires, Jane Yolen and Martin H. Greenberg, eds.**
- **"The Greenhouse Papers" Analog, November 1991**
- **"The Number of the Beast" in Alien Pregnant By Elvis, Esther Freisner and Martin Greenberg Eds., DAW, 1994**
- **"Engineering Reality" appeared on the electronic Galaxy.**
- **"A Life of Its Own" Analog, January 1997**
- **"The Awful Truth," appeared on Middle Georgia Web Magazine and Jackhammer**
- **"The Saucer Man," Interzone, August 1997**
- **"The Crystal Highway," Odyssey December 1997**
- **"The Rumor of the Ruined City," Asimov's SF April 1999**
- **"Squirrels," HMS Beagle issue 80 (late June 2000) (site is no longer on-line)**
- **"By the Lake," Analog November 2002**
- **"Draft Dodger's Rag," Analog, March 2004**
- **"Directed Energy," Nature, April 13, 2006 (on line at Nature)**
- **"Operation Tesla," Nature, October 5, 2006 (on line at Nature)**
- **"Quantum Entanglements," Nature Physics, April 2007 (on line at Nature Physics)**

"The Neanderthal Correlation," Nature, May 22, 2008 (on line at Nature)

See more science fiction links at sff.net



AN ENTRY-LEVEL GUIDE

Understanding Lasers

3RD EDITION

Jeff Hecht

IEEE Understanding Science & Technology Series PRESS

Understanding Lasers (Hecht 1)

An introduction to lasers and related optical technology, intended for the nontechnical reader, richly illustrated and with little mathematics. This new edition has been extensively updated to describe the state of the art in solid-state and semiconductor lasers, and a wide range of new laser applications.

Updated to reflect advancements since the publication of the previous edition, *Understanding Lasers: An Entry-Level Guide, 3rd Edition* is an introduction to lasers and associated equipment. You need only a minimal background in algebra to understand the nontechnical language in this book, which is a practical, easy-to-follow guide for beginners. By studying the conceptual drawings, tables, and multiple-choice quizzes with answers provided at the back of the book you can understand applications of semiconductor lasers, solid-state lasers, and gas lasers for information processing, medicine, communications, industry, and military systems.

Introduction to Laser Technology (Hecht 2)

Introduction to Laser Technology, is intended for those who are familiar with the principles of electro-optical technology, but possess limited formal training. This comprehensive treatment is essential, one-stop shopping for professionals, students, and non-engineer executives interested in the design, sales, or applications of the laser and electro-optics industry.

Would you like to know how a laser works, and how it can be modified for your own specific tasks? This intuitive third edition-previously published as *Understanding Laser Technology*, First and Second Editions-introduces engineers, scientists, technicians, and novices alike to the world of modern lasers, without delving into the mathematical details of quantum electronics. It is the only introductory text on the market today that explains the underlying physics and engineering applicable to all lasers. A unique combination of clarity and technical depth, this book begins with an introductory chapter that explains the characteristics and important applications of commercial lasers worldwide. It proceeds with discussions on light and optics, the fundamental elements of lasers, and laser modification. The concluding chapters are composed of a survey of modern lasers, including:

- Semiconductor lasers
- Optically pumped solid-state lasers
- Ion, HeNe, and HeCd lasers
- Carbon dioxide lasers
- Excimer lasers (codiscovered by J. J. Ewing)
- Ultrafast and tunable lasers, OPOs

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THIRD EDITION

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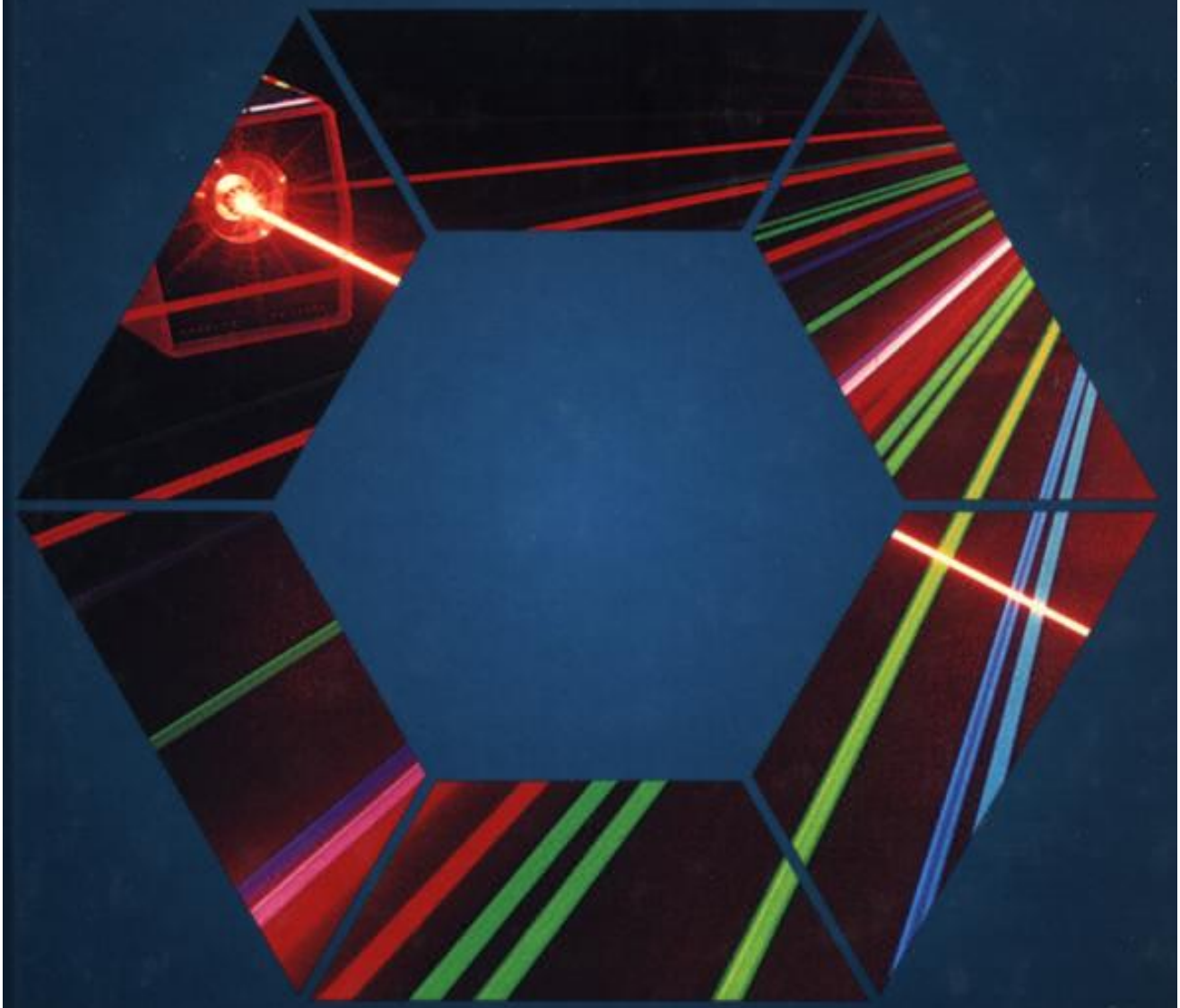

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SECOND EDITION

JEFF HECHT

A McGRAW-HILL
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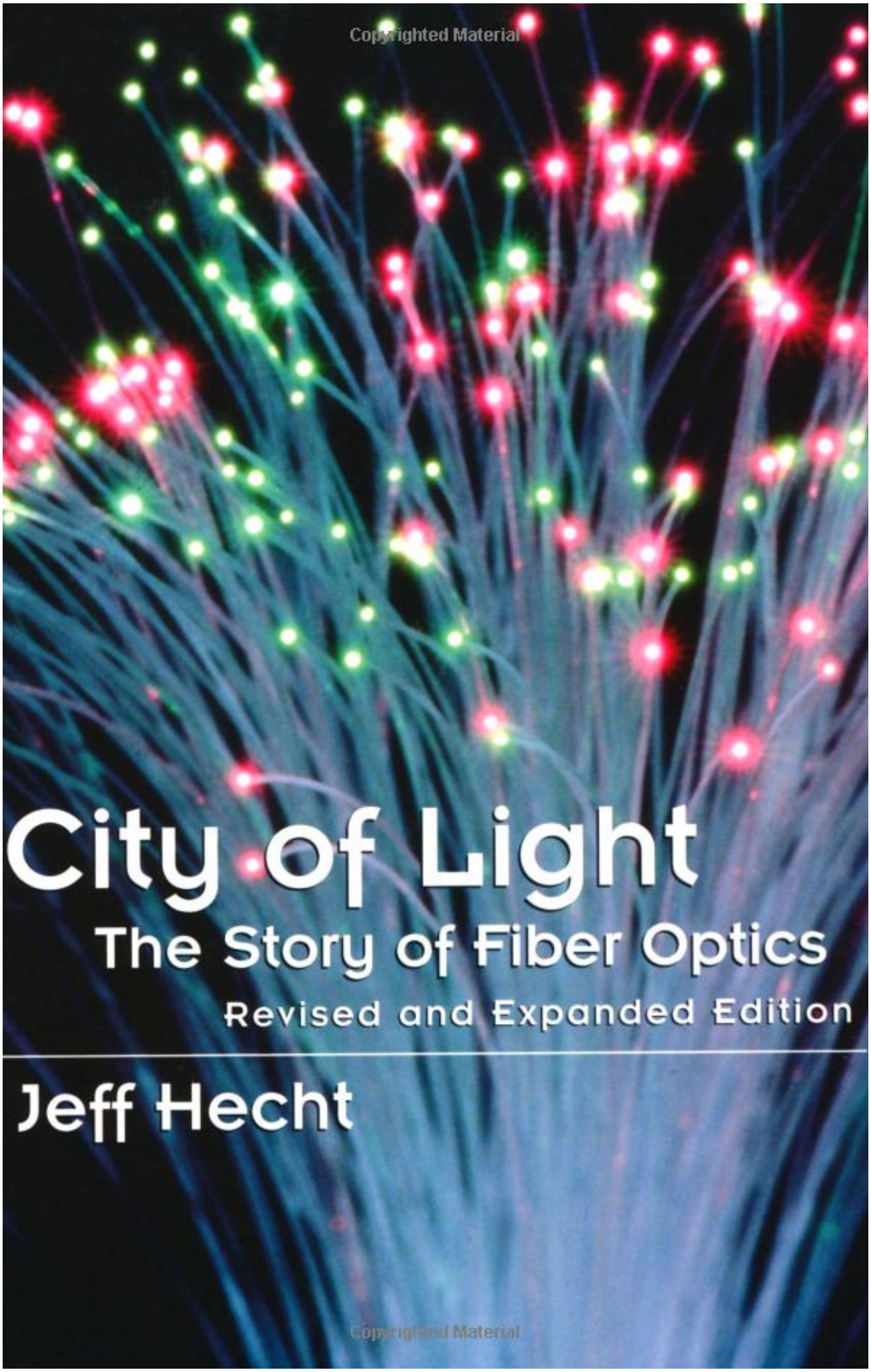
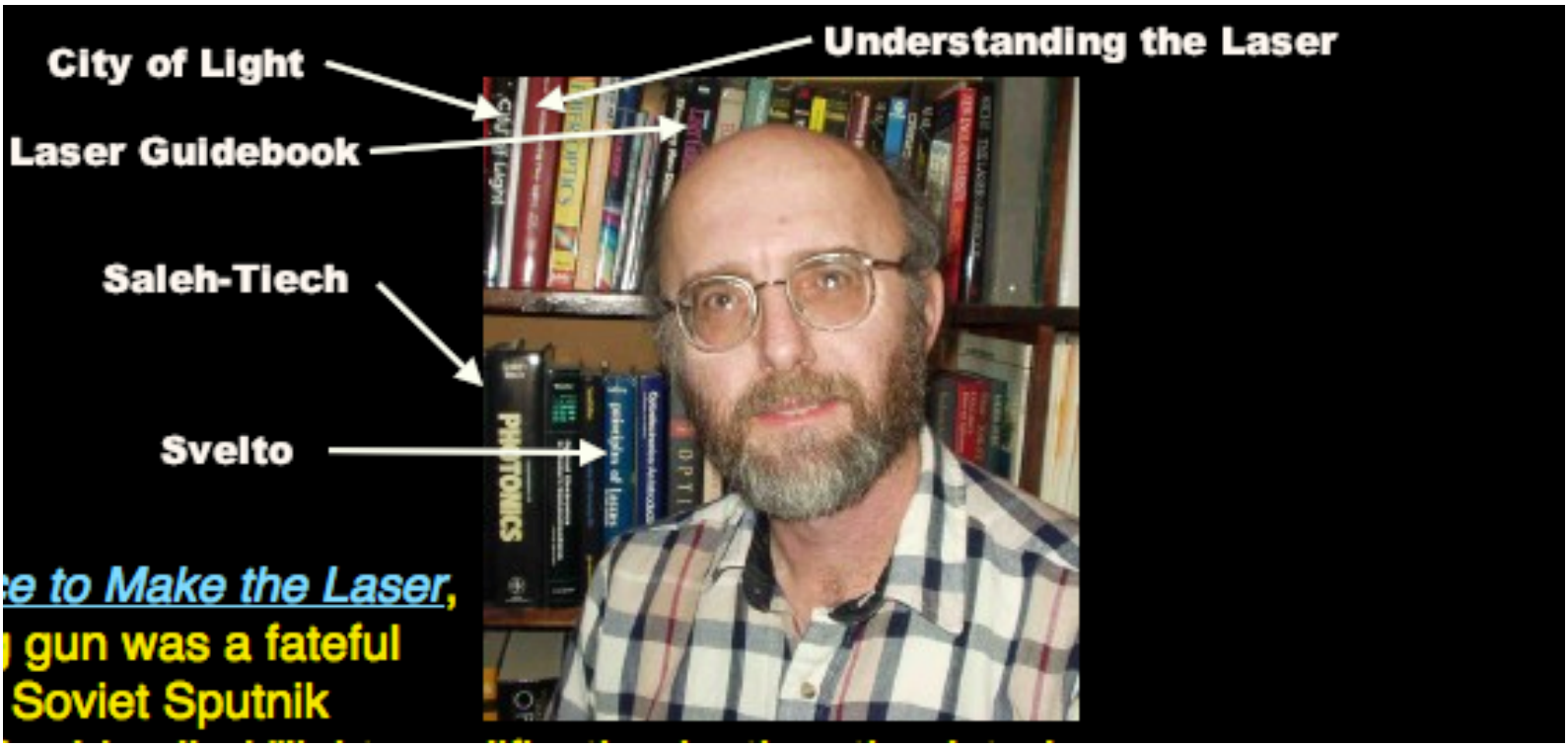


City of Light

The Story of Fiber Optics

Revised and Expanded Edition

Jeff Hecht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