

# OPN

Optics &  
Photonics  
News

## The Life and Legacy of **Arthur L. Schawlow**

Ultrahigh-Speed  
Processing  
Using Space-  
Time Duality

Acousto-Optic  
Devices

*Applied Optics  
and the Laser*

Arthur Schawlow once described himself as “the most uncompetitive person you ever saw.” He worked very well with others, particularly his brother-in-law Charles Townes.

COVER: Schawlow shooting at a double balloon with a toy gun that included a real laser. The gun would pop the inside blue balloon but not the clear outer one, showing that lasers could be tuned to pass through a transparent surface. Image courtesy of AIP Emilio Segrè Visual Archives, Physics Today Collection.

[ COVER STORY ]

**22 Credible (and Edible) Lasers: The Life of Arthur L. Schawlow**

Arthur L. Schawlow was truly a one-of-a-kind scientist and human being. Known for his gentle spirit, his sense of humor and his scientific creativity, he was the only Nobel Prize winner to have served as an OSA president. OPN examines his life and legacy on the 90<sup>th</sup> anniversary of his birth.

Patricia Daukantas

**29 Ultrahigh-Speed Optical Processing Using Space-Time Duality**

Temporal all-optical processing systems—which are based on the space-time duality of light—provide a practical approach for meeting the bandwidth demands of next-generation ultrahigh-speed technologies.

Mark A. Foster, Reza Salem and Alexander L. Gaeta

**36 In-Fiber Acousto-Optic Devices for Laser Applications**

These authors review in-fiber acousto-optic devices that have demonstrated new possibilities for the control of Q-switched distributed feedback and mode-locked all-fiber lasers—in other words, tools for using sound to control light.

Christian Cuadrado-Laborde, Antonio Díez, Miguel V. Andrés, José L. Cruz and Miguel Bello-Jiménez

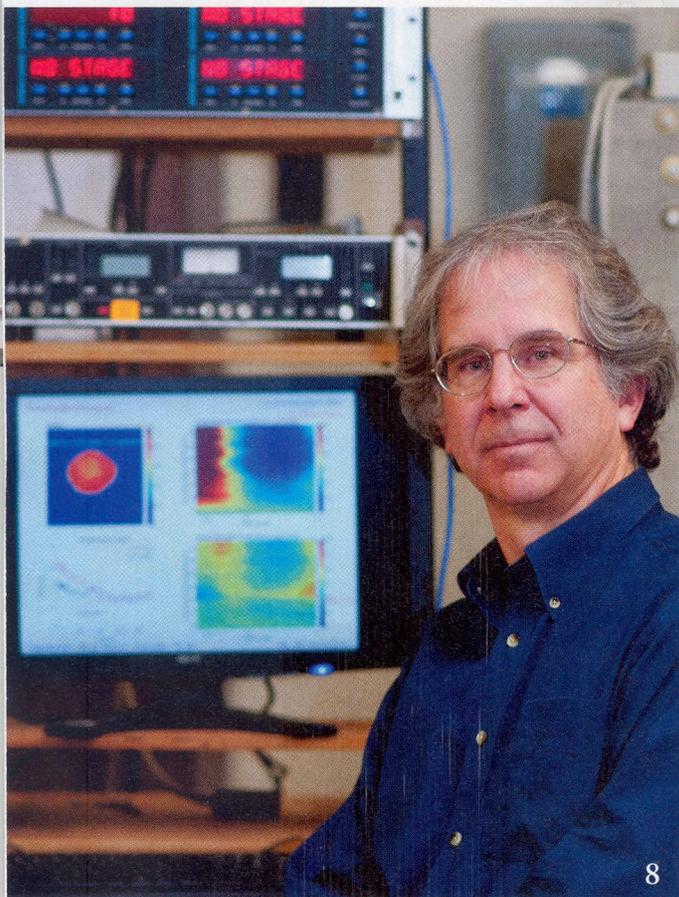
**42 Applied Optics and the Early Days of the Laser**

Prompted by the complaints of the so-called “Subversive Optics Society” in the late 1950s, OSA launched a new journal in 1962 to represent modern topics in optics. Due to fortuitous timing—and a highly competent managing editor—*Applied Optics* was able to cover the most current topic imaginable long before its competition: the laser.

John N. Howard



Arthur Schawlow visits the Luxembourg Gardens in Paris, France, in 1985. Image courtesy of Helen Schawlow Johnson.



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Kristin Waller

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Remembering Hendrik de Lang, an OSA Fellow Emeritus, and Benedetto Daino, one of the principal scientists responsible for advancing optical communications in Italy.



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