obituaries

To notify the community about a colleague's death, subscribers can visit http://www.physicstoday.org/obits, where they can submit obituaries (up to 750 words), comments, and reminiscences. Each month recently posted material will be summarized here, in print. Select online obituaries will later appear in print.

Theodore Harold Maiman

Physicist Theodore Harold Maiman, who died of a rare genetic disease on 5 May 2007 in Vancouver, British Columbia, is credited with the invention of the first laser. The Maiman ruby laser was an elegantly simple device that consisted of a crystalline pink ruby cylinder, silvered on the ends and placed on the axis of a helical xenon flash lamp, which provided excitation. A profusion of lasers shortly followed Ted's demonstration of the original ruby laser in 1960 and led eventually to numerous applications of the coherent optical technology.

Born in Los Angeles on 11 July 1927, Ted learned electronics at an early age from his father, Abraham Maiman, an electrical engineer at AT&T, who kept a home laboratory where Ted would design and build vacuum-tube audio amplifiers and compete with his father to produce the best frequency response. The ultimate test was playback of a 78-RPM vinyl recording of the high and low sounds produced by a steam locomotive. As a teenager growing up in Denver, Colorado, Ted put his budding electronics expertise to good use repairing radios and small electrical appliances. He enlisted in the US Navy before his 18th birthday and added to his electronics expertise by working in radar and communications.

Ted earned a degree in engineering physics from the University of Colorado in 1950. He spent a year in Columbia University's graduate physics program, then transferred to Stanford University. There he met his eventual mentor, Willis Lamb, who was in need of a graduate student with a background in sophisticated electronic measurements. Ted certainly filled the bill, and he eventually designed and built electronics and assembled optics necessary to measure the Lamb shift in an elevated quantum level of helium. He received his doctorate in 1955; his thesis, titled "Microwave-Optical Investigation of the 3^3P Fine Structure in Helium," was published in *Physical Review* in January 1957. Lamb was awarded the Nobel Prize in Physics in 1955.

AIP EMILIO SEGRE VISUAL ARCHIVES

Theodore Harold Maiman

After completing his doctorate, Ted accepted a position in the atomic physics department at Hughes Research Laboratories (HRL) in Culver City, California. It was during this period that I met and began working for Ted. I was in the first year of a Hughes master's-degree work-study fellowship in physics at the University of Southern California. Master's students were paid through the fellowship office, and since money was scarce, I became Ted's bargain-basement research assistant. For the Signal Corps at Fort Monmouth, New Jersey, Ted built a low-noise microwave receiver using a ruby maser preamplifier. He designed a dielectrically filled cavity using ruby, the amplifying medium, as the dielectric. That innovation resulted in a threefold reduction of cavity dimensions and allowed the use of a 340-gram permanent magnet. The maser improved by a factor of 10 the figure of merit (gain–bandwidth product) of then state-of-the-art masers.

In mid-1959 Ted turned his considerable talents toward building a laser. He dissected the 1958 *Physical Review* article by Arthur Schawlow and Charles Townes and determined that their proposal for a potassium-vapor laser had many design flaws and, in his estimation, was unworkable. He also recast Schawlow–Townes in terms of gain and feedback rather than spectroscopic terms such as linewidth and lifetime. The optical spectroscopy of ruby identified it as a candidate for a laser. However, a low measurement of the fluorescent quantum efficiency in ruby was cited by Schawlow in dismissing pink ruby as a viable laser candidate. Ted was not easily dissuaded. We made a microwave measurement of the change in the ground-state population of pink ruby due to excitation by a pulsed flash lamp. We found a 3% change in ground-state population, coupling perhaps 1% of the strobe light into the ruby. From that day on, Ted knew the laser would work, and work it did some four months later.

In early 1960 HRL moved to its present location in Malibu, California. The move delayed the actual laser demonstration. The rest is history, so to speak. The ruby laser worked on the first attempt on 16 May 1960. As we gradually increased the voltage on the flash lamp, we crossed a threshold at which the intensity increased dramatically. I was ecstatic, Ted was subdued; the gravity of this historically significant scientific accomplishment left him in awe. Subsequent measurements confirmed spectral narrowing of the R_1 line in ruby, and the laser era was born.

Ted left HRL in 1961 to found Korad Corp, which designed and manufactured high-power lasers; it was later bought out by Union Carbide Corp. He eventually served as vice president in charge of R&D for TRW Inc, the position from which he retired in 1984.

we hear that

PHYSICS TODAY has moved the We Hear That department from the print magazine to our website. Member-society news, including items about awards and elections, is now available at http://www.physicstoday.org/wht. For more about the change, see the Editor's note on page 8.

Ted received numerous awards in recognition of his seminal work on the ruby laser. A personal account of Ted's quest for the laser was published in his book *The Laser Odyssey* (Laser Press, 2000). He took great pride in the laser's medical applications and was particularly proud of his induction into the Royal College of Surgeons of England as the only nonphysician member of the society.

In his later years, Ted served as an adjunct professor at Simon Fraser University in Vancouver. SFU has established a foundation to archive his laser memorabilia.

Ted was my mentor; he taught by example, not by lecture. He had supreme confidence in his ability to analyze complex physical systems, and he generously shared that knowledge. Ted once told me he was a direct descendant of Moses Maimonides, the 12th-century Hebrew philosopher who said he could give a man a fish to feed his family for a day, or he could teach that man how to fish and feed his family for life. True to his forebear, Ted taught us how to fish.

Irnee J. D'Haenens
Hughes Research Laboratories
Malibu, California

Bohdan Paczyński

Bohdan Paczyński, one of the greatest astronomers of the 20th century, died on 19 April 2007 at home in Princeton, New Jersey. With great courage he had battled brain cancer since 2003. His ashes were buried in Warsaw, Poland.

Born on 8 February 1940 in Soviet-occupied Vilnius, Lithuania, Paczyński and his family moved to Poland after World War II. His interest in astronomy started early; as a 14-year-old, he participated in observations of eclipsing binary stars. Educated at Warsaw University, he received his MSc in 1962 and PhD in 1964, both in astronomy. His PhD thesis, with Stefan Piotrowski as his adviser, was published as "Fluctuations in Interstellar Absorption from Star Counts in the Milky Way" (*Acta Astronomica*, volume 14, page 157, 1964). He continued his observational studies in Poland but later used foreign telescopes, including those at California's Lick Observatory in 1962–63.

Paczyński was interested in all aspects of stellar behavior, both the observational facts and the theoretical models to explain them. In the mid-1960s he became increasingly involved in the theoretical studies. The computer

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Bohdan Paczyński

program he wrote—the "Paczyński Code"—to calculate stellar evolution was an early example of open-source software. By the late 1960s, he was recognized as a leading authority on stellar evolution. In 1967 he pointed out that gravitational radiation would have important effects on the evolution of close binary stars, and in 1970 he discovered a tight relationship between stellar luminosity and core mass for stars that had exhausted hydrogen in their cores.

Paczyński was visiting Caltech when martial law was declared in Poland in 1981, and he and his family decided to remain in the US. Many universities sought to hire him; he accepted a professorship at Princeton University and moved there in 1982. He remained

Recently posted death notices at http://www.physicstoday.org/obits:

John William Gofman
21 September 1918 – 15 August 2007
Ralph Asher Alpher
3 February 1921 – 12 August 2007
Julius Wess
5 December 1934 – 8 August 2007
Frederick Walter Young Jr
13 September 1924 – 2 August 2007
S. N. Ghoshal
1923 – 30 July 2007
Lorenzo M. Narducci
25 May 1942 – 21 July 2006
Kai Siegbahn
20 April 1918 – 20 July 2007
Bernard Ephraim Julius Pagel
4 January 1930 – 14 July 2007
Benjamin Ching-Chun Shen
28 January 1938 – 12 July 2007
Donald Michie
11 November 1923 – 7 July 2007