



Lange (far left) and Meyerowitz (left).

Andrew Lange, Goldberger Professor of Physics, has been selected to be a corecipient of the 2006 Balzan Prize for Observational Astronomy and Astrophysics, with BOOMERANG colleague Paolo de Bernardis. The BOOMERANG experiment, utilizing a microwave telescope suspended from a balloon over the Antarctic, has provided important new images of the early universe. A second Balzan Prize, for Plant Molecular Genetics, went jointly to **Elliot Meyerowitz**, Beadle Professor of Biology and chair of the biology division, and Christopher Somerville of Stanford

University, for “their joint efforts in establishing *Arabidopsis* as a model organism for plant molecular genetics.”

The prizes will be personally presented by the president of the Italian Republic, Giorgio Napolitano, on November 24 in the Palazzo Corsini in Rome. Each prize is worth one million Swiss francs (about \$810,000), which is shared equally among the winners, who in turn must allocate half of their award to research projects to be carried out by young scholars in their respective fields.

The Balzan Prize is almost as lucrative as the better-

known Nobel, and is one of the highest world honors for science, culture, and humanitarianism. Established by Angela Lina Balzan, heiress of Italian newspaper magnate Eugenio Balzan, who had invested his assets in Switzerland and then left Italy to protest the rise of fascism, the International Balzan Foundation gives two prizes annually in various fields of science and two in the humanities. It also awards a two-million-franc Prize for Humanity, Peace, and Brotherhood among Peoples at longer intervals. □

**NELSON LEONARD
1916 – 2006**

Faculty Associate in Chemistry Nelson J. Leonard died of cancer at his home in Pasadena on Monday, October 9, barely a month after his 90th birthday. Although Leonard did not join Caltech until 1992, at the ripe old age of 76, “he played a very important role in the life of the division,” says David Tirrell, the McCollum–Corcoran Professor and professor of chemistry and chemical engineering, and division chair. “He mentored many younger faculty members, participated in all our divisional decisions, and was an active member of the Freshman Admissions Committee for many years.”

Leonard was born on September 1, 1916, in Newark, New Jersey, and earned a BS from Lehigh University in 1937, a BSc as a Rhodes scholar at Oxford University in 1940, and a PhD from Columbia University in 1942. He moved to the University of Illinois at Urbana-Champaign as a postdoc and remained there until he retired in 1986.

A synthetic organic chemist with an interest in biochemistry and plant physiology, Leonard helped develop a method for mass-producing the antimalarial drug chloroquine in time for it to be used in the Pacific Theater during World War II.

HONORS AND AWARDS, CONTINUED. . .

of innovative research instruments and techniques.” Based at the University of Massachusetts Amherst, the project includes team members from Caltech’s Infrared Processing and Analysis Center (IPAC) and from JPL. The Muhlmann Award is given annually “for recent significant observational results made possible by innovative advances in

astronomical instrumentation, software, or observational infrastructure.”

Ahmed Zewail, Nobel laureate, Pauling Professor of Chemical Physics and professor of physics, has been selected to receive the “Albert Einstein” World Award of Science 2006 for his development of the new field of femtoscience and his “valuable

contributions to the revolutionary discipline of physical biology.” The honor is awarded by the World Cultural Council, which was founded in Mexico in 1982. □

**DEAN E. WOOLDRIDGE
1913 – 2006**

With his longtime collaborator Folke Skoog (BS '32, PhD '36), a plant physiologist at the University of Wisconsin, Leonard did groundbreaking work on the substances that initiate plant growth and flowering. He also developed a host of the indispensable fluorescent "markers" used to trace DNA, RNA, and other biochemicals within cells.

He published more than 400 papers and held eight patents.

At the same time, Leonard was a critically acclaimed singer, soloing with the Chicago, Cleveland, and St. Louis symphony orchestras. After joining Caltech, he served on the board of the Pasadena Symphony.

Leonard is survived by his second wife, Peggy Phelps, whom he married in 1992; daughter Marcia, of Maplewood, NJ; sons Kenneth, of Agoura Hills, CA; James, of Olympia, WA; and David, of Seattle, WA; and seven grandchildren. His first wife, the former Louise Vermey, died in 1987.

A memorial service is planned for November 13 at All Saints Episcopal Church in Pasadena; memorial donations may be made to the Nelson J. Leonard Fund at the Pasadena Symphony. □—DS

Dean Everett Wooldridge, a leading scientist and technological industrialist, died on Wednesday, September 20, in Santa Barbara, California, after a brief illness. He was 93.

Born in Chickasha, Oklahoma, on May 30, 1913, Wooldridge graduated high school at age 14, and received his bachelor's and then master's degrees from the University of Oklahoma before the age of 20. In 1936, at age 23, he received a doctoral degree in physics (with the rare designation of "summa cum laude") from Caltech. He then joined the staff of Bell Laboratories and achieved a worldwide reputation as a leading expert in the theory of magnetism basic to modern electronics. When World War II began, Wooldridge became the head of a group developing the first airborne computers to guide missiles.

In 1946, he left Bell and joined classmate Simon Ramo (PhD '36) to build a unique electronics and missile corporation now known as Hughes Electronics. In five years that company concentrated the largest number of engineers and scientists in the U.S. devoted exclusively to military technology. It was the premier company producing airborne radar, computers,

and guided missiles to counter a possible bomber attack on the U.S., with the Hughes apparatus equipping every American interceptor airplane.

In 1953, Wooldridge and Ramo founded the Ramo-Wooldridge Corporation with the backing of Thompson Products, Inc., which manufactured parts for Hughes's Falcon missile. Mathematician John Von Neumann picked Wooldridge and Ramo to join a government-initiated committee that formed the nation's Intercontinental Ballistic Missile (ICBM) program. Wooldridge and Ramo were then awarded the prime contract for overall systems engineering and technical direction of the ICBM, to which President Eisenhower assigned the highest national priority and which became the largest single weapon systems program in U.S. history. In 1958, the Ramo-Wooldridge Corporation was the first corporation to build and launch a spacecraft, Pioneer 1. One of its later spacecraft, Pioneer 10, was the first to leave the solar system, transmitting back outer-space data for well over 30 years.

Ramo-Wooldridge merged with Thompson Products in 1958 to form TRW, Inc. With Dean Wooldridge as its president, TRW became

one of the world's largest high-technology companies. After he retired in 1962, Wooldridge traveled with his wife for 10 years and then took up the study of neurology. From these studies he authored two highly respected books, *The Machinery of the Brain* and *The Machinery of Life*, which were widely recommended in postgraduate courses in leading universities.

Wooldridge served as a trustee of Caltech and a consultant to the President's Science Advisor. He received a number of honors, including membership in the National Academy of Sciences.

Wooldridge married Helene Detweiler in 1936. She passed away in 2001. He leaves three children, Dean E. Wooldridge Jr. of Las Vegas, Nevada, Anna Lou Eklof of Bailey, Colorado, and James A. Wooldridge of Basking Ridge, New Jersey, and three grandchildren, Michael Andrew, Jonathan David, and Lisa Michelle Wooldridge. □