Random Walk

Roger W. Sperry 1914–1994

Roger W. Sperry, 1981 Nobel laureate in physiology or medicine and the Institute's Board of Trustees Professor of Psychobiology, Emeritus, died on April 17, 1994, of complications associated with muscular dystrophy. He was 80.

A native of Hartford, Connecticut, Sperry earned his bachelor's degree in English literature from Oberlin College in 1935, then focused his attention on psychology, earning his master's in that field in 1937, also from Oberlin. For his doctorate, he studied zoology, earning his degree from the University of Chicago in 1941. In 1954 he became the Hixon Professor of Psychobiology at Caltech, where he remained until his retirement from teaching in 1984. He is survived by his wife, brother, two children, and two grandchildren.

Sperry is best known for his "left-brain/right-brain" research, which won him the Nobel Prize along with David H. Hubel and Torsten N. Wiesel. He also received the National Medal of Science in 1989 from President George Bush, the Wolf Prize in Medicine and the Albert Lasker Medical Research Award in 1979, and the California Scientist of the Year Award in 1972, among many other honors.

A memorial service was held on June 3 in the Beckman Institute Auditorium, excerpts from which will be published in the next issue of *E&S*.

Honors and Awards

Clarence Allen, professor of geology and geophysics, emeritus, has received the California Earthquake Safety Foundation's Alfred E. Alquist Award for "achievement in earthquake safety and sustained leadership in the earthquake field."

Michael Alvarez, assistant professor of political science, has been awarded a 1994 Haynes Foundation Faculty Fellowship and a John M. Olin Faculty Fellow for the 1994–95 academic year.

Fred Anson, professor of chemistry and chairman of chemistry and chemical engineering, has won the Award in Electrochemistry, given to a member of the American Chemical Society's Division of Analytical Chemistry who has "uniquely advanced the field."

Pamela Bjorkman, assistant professor of biology and assistant investigator for the Howard Hughes Medical Institute, will receive a 1994 Gairdner Foundation International Award for her discovery, with Harvard professor Don Wiley, of the structure of a peptide-antigen complex that triggers an immunological response in the body. Bjorkman and Wiley are two of five to be so honored.

Lance Davis, Harkness Professor of Social Science, and Robert Gallman of UNC Chapel Hill have received the third Sanwa Award from the Center for Japan-U.S. Business and Economic-Studies at New York University for their study of "International Capital Flows, Domestic Capital Markets, and Economic Growth in Four Frontier Countries."

Two Caltech assistant professors of biology have been chosen as Howard Hughes Medical Institute investigators. William Dunphy and Stephen Mayo join the 49 new and 225 current investigators nationwide who HHMI feels are "likely to make significant advances in biomedical research and to develop new approaches to overcoming disease."

The American Academy of Arts and Sciences has elected Robert Grubbs, Atkins Professor of Chemistry, and Shrinivas Kulkarni, professor of astronomy, to join its membership. Grubbs and Kulkarni are among the 210 honorees this year and among the 70 Caltech members of the Academy.

Hiroo Kanamori, Smits Professor of Geophysics and director of the Seismological Laboratory, has been awarded the 1993 Asahi Prize by the Asahi newspaper company in recognition of his "studies of the basic physics of the occurrence of earthquakes, and their applications to hazard reduction."

Wolfgang Knauss, professor of aeronautics and applied mechanics, will receive the Murray Medal, named for the society's first president from the Society for Experimental Mechanics.

Manfred Morari, McCollum-Corcoran Professor of Chemical Engineering, has received the Grössen Ehrenzeichen des Landes Steiermark, awarded by the Austrian state of Steiermark.

Ned Munger, professor of geography, emeritus, has been given a distinguished alumni award for public service by the University of Chicago, where Munger

In a White House ceremony on September 30, Hans Liepmann, von Kármán Professor of Aeronautics, Emeritus, received the National Medal of Technology from President Clinton, whose hair has scored the lowest coefficient of drag ever recorded for a sitting president. Liepmann, who won the National Medal of Science in 1986, is the eleventh person to get both medals.

did his graduate work and later led programs in support of African and African-American universities and South African political change.

John Roberts, Institute Professor of Chemistry, Emeritus, is one of four 1994 Chemical Pioneers of the American Institute of Chemists, who cited his "major impact on advances in chemical science or industry."

Robert Rosenstone, professor of history, has received a Fulbright grant to teach a graduate seminar on "the historical film" at the University of Barcelona next year. He has also been awarded a 1994 National Endowment for the Humanities summer stipend to do a research project on films about the Spanish Civil War.

Philip Saffman, professor of applied mathematics, is the recipient of the 1994 Otto Laporte Award, presented by the American Physical Society. The award recognizes outstanding accomplishments in fluid dynamics research.

Erin Schuman, assistant professor of biology, is one of 100 "outstanding young scientists and economists" to be awarded a Sloan Research Fellowship.

David Stevenson, professor of planetary science and division chair for Geological and Planetary Sciences, has been presented with the 1994 Fred Whipple Award by the American Geophysical Union, given for outstanding contributions in planetology.

Kai Zinn, assistant professor of biology, is one of 14 scientists to receive a McKnight Neuroscience Investigator Award, which supports studies relating to the basic mechanisms of memory and the disorders affecting it.

Dervan Appointed Division Chair

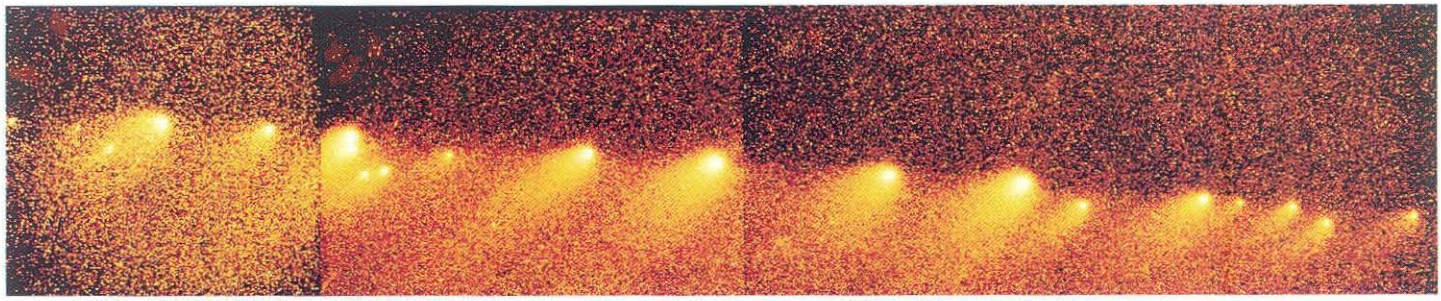
On July 1, Peter Dervan, the Bren Professor of Chemistry, will start his duties as the new chair of the Division of Chemistry and Chemical Engineering. He is replacing Professor of Chemistry Fred Anson, who is stepping down after 10 years as chair.

A graduate of Yale University, where he received his PhD in 1972, Dervan joined the Caltech faculty 21 years ago as an assistant professor. He was appointed associate professor in 1979, full professor in 1982, and was named to the Bren professorship in 1988.

Dervan's research pioneers the interface of chemistry and biology. His group is defining the principles for targeting single sites in the genetic material, DNA, by chemical methods. In 1993 the American Chemical Society recognized Dervan for his research and awarded him the prestigious Arthur C. Cope Award.

Dervan's numerous awards include the Willard Gibbs Medal and the William H. Nichols Medal. Well-known for his commitment to undergraduate teaching, Dervan received the highest honor given by Caltech undergraduates—the ASCIT teaching award in 1980 and 1981. Dervan is a member of the National Academy of Sciences, and is a fellow in the American Academy of Arts and Sciences.

Below: Shoemaker-Levy 9, as seen in false color by the newly repaired Hubble Space Telescope on January 24, 1994.



Above: Three shots of fragments Q (at center of each image) and P (at right). The pre-service-call July 1993 image revealed that Q was actually two hunks a mere .3 arc seconds apart—too close for ground-based telescopes to distinguish. The fainter P was just a blur, due to Hubble's spherical aberration. In January, 1994, Q's halves had drifted a full arc second apart, and Hubble's sharpened eye saw that P, too, had been twins all along. By March, P1 had faded into a puff of dusty vapor, and P2 had split in two. As the comet crumbles, the explosive power of the pieces dwindles. Fortunately, the other chunks have been hardier, at least so far.

Comet Crash Update

Periodic Comet Shoemaker-Levy 9 continues on its one-way trip to Jupiter (*E&S*, Fall 1993.) The train of comet fragments will reach the end of the line over a five-and-a-half-day span centered on July 19, 1994. The latest orbital calculations by Paul Chodas and Donald Yeomans of Caltech's Jet Propulsion Laboratory put the impact points a hairsbreadth beyond the horizon—three to eight degrees, as seen from Earth. This means that the upwelling fireballs should be visible over the horizon within minutes of impact, assuming that they rise a couple of hundred kilometers above the cloud tops, says Chodas, and the entry wounds themselves will roll into view some ten minutes after impact. Depending on the fragment size and the impact model used, this is close to the plume's predicted lifetime.

The question is how opaque the plume will be after rising 200 kilometers, or, if you're an infrared astronomer, how hot it will be. Recent calculations by graduate student Toshiko Takata, Visiting Associate in Planetary Science John O'Keefe, JPL's Glenn Orton (PhD '75), and Professor of Geophysics Thomas Ahrens (MS '58) indicate that a two-kilometer-diameter fragment could create a plume with a visual magnitude as high as −2, roughly the magnitude of Jupiter itself; a 400-meter chunk could be +0.3, comparable to such bright stars as Betelgeuse or Arcturus. In the former case, assuming the plume peeps over the horizon, Jupiter would suddenly flare to twice its normal brightness as seen from Earth. But in a final fit of perversity, all of the largest fragments are slated to hit either during the day or after Jupiter has set as seen from Pasadena, Chodas says.

The July issue of *Sky & Telescope* has 18 pages devoted to the event, including tips for amateur observers and a complete table of Chodas and Yeoman's impact times, plus eight pages of artist's conceptions for those of us who are willing to take someone else's word for it.