

office in Zurich, Switzerland, and one in Milan, Italy, awards the prizes to achieve the goal of "fostering, on a worldwide level, culture and science, outstanding humanitarian causes, and peace and brotherhood among peoples, regardless of nationality, race, or creed."

IN BRIEF

Evgeny L. Feinberg and **J. D. Bjorken** are the winners of this year's Pomeranchuk Prize, which is given by Moscow's Institute of Theoretical and Experimental Physics. Feinberg, a professor, academician, and principal researcher with the P. N. Lebedev Physical Institute in Moscow, was cited for his "outstanding contributions to theoretical physics and especially to the theory of inelastic collisions of hadrons." Bjorken, who retired in 1998 as a theoretical physicist with SLAC, was cited for his "outstanding contributions to particle physics and quantum field theory, in particular for formulating the scaling law in deep inelastic processes." Each prizewinner will receive a certificate and an undisclosed monetary prize. Established in 1998, the Pomeranchuk Prize, named for scientist Isaak Yakovlevich Pomeranchuk, is awarded annually for achievements in all theoretical fields to which Pomeranchuk had contributed.

This past September, at its annual meeting in Bremen, Germany, the German astronomical society Astronomische Gesellschaft presented awards to **Roger Penrose** and **Heino Falcke**. Penrose, Emeritus Rouse Ball Professor of Mathematics at Oxford University in England, was awarded the Karl Schwarzschild Prize, the society's highest award, for his "great scientific work" that "spans a nearly unbelievable range, from fundamental mathematical research, to physics, astronomy, cosmology, and even to the working of the brain and the human perception of the world," according to the citation. Falcke, a scientist with the Max Planck Institute for Radio Astronomy in Bonn, Germany, and a lecturer at the University of Bonn, received the Ludwig Biermann Prize in recognition of his work on black holes, specifically the relationship between accretion disks and jets, his modeling of the black hole in the galactic center, the prediction of a "shadow" of the event horizon observable with radio interferome-

ters, and the detection of many new black holes in nearby galaxies through radio interferometry.

David J. McComas joined the Southwest Research Institute in Texas this past September as the executive director of its instrumentation and space research division. Formerly the founding director of the Center for Space Science and Exploration at Los Alamos National Laboratory and program manager of NASA projects there, McComas will continue to serve as the principal investigator on several NASA instruments.

Stephen Rodgers became manager of the Propulsion Research Center at NASA's Marshall Space Flight Center in Huntsville, Alabama, in August. He previously served as chief of the propulsion sciences and advanced concepts division at the Air Force Research Laboratory on Edwards Air Force Base in California.

The Bjørn H. Wiik Prize was awarded for the first time this past May. It went to **Evgeny Saldin**, **Evgeny Schneidmiller**, and **Mikhail Yurkov**, physicists at the German Electron Synchrotron (DESY) TESLA test facility in Hamburg, Germany, for "their outstanding contributions to

the Free Electron Laser [FEL] project at DESY," according to the citation. Margret Becker-Wiik presented the award, which was established in honor of the DESY director who died in 1999 and acknowledges "outstanding contributions to the advancement of research programs or technical development projects at DESY." The prize will be handed out every two years.

At its annual meeting in May in Vancouver, British Columbia, the Canadian Astronomical Society presented the Carlyle S. Beals Award for 2000 to **Gilles Fontaine**, a professor of physics at the University of Montreal. The award is given to a Canadian astronomer or an astronomer working in Canada in recognition of either a specific achievement in research or a lifetime of innovative research, according to the citation. Fontaine's primary field of research is the study of the late phases of stellar evolution, white dwarf stars, subdwarf stars, and asteroseismology. Invited to address the society at the meeting, Fontaine gave a talk entitled "The Potential of White Dwarf Cosmochronology." In addition to the award, he received a cash prize of \$1000.

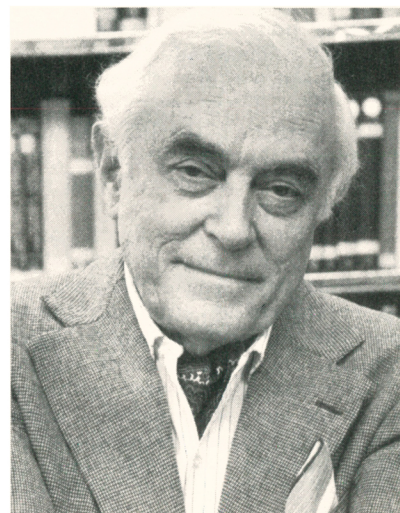
OBITUARIES

John Alexander Simpson

John Alexander Simpson, a nuclear and cosmic-ray physicist and Arthur H. Compton Distinguished Service Professor emeritus at the University of Chicago's Enrico Fermi Institute and department of physics, died on 31 August from pneumonia following successful heart surgery at a Chicago hospital.

Simpson was born on 3 November 1916 in Portland, Oregon. He earned an AB degree in physics from Reed College in 1940 and both an MS (1942) and PhD (1943) in physics from New York University.

Simpson's professional career began in 1943 as a group leader on the Manhattan Project. Recognizing the importance of acquainting the public and political leaders with the implications of nuclear energy, he became a founding member and first chairman of the Atomic Scientists of Chicago



JOHN ALEXANDER SIMPSON

go and a cofounder of the *Bulletin of the Atomic Scientists* in 1945. Also that year, Simpson joined the faculty of the University of Chicago as an instructor in the department of

physics. He remained at the university for the rest of his career. He took a leave of absence from the university in 1945 to become an unofficial adviser to Senator Brien McMahon of Connecticut, who, as chairman of a special committee on atomic energy, put through the McMahon Act of 1946, which placed the control of atomic energy in civilian hands.

By 1946, Simpson's scientific curiosity turned to the mysterious phenomenon of cosmic rays. To exploit the geomagnetic field as a magnetic spectrometer, Simpson invented the cosmic-ray neutron monitor and constructed a network of five neutron monitor stations from the geomagnetic equator in Huancaayo, Peru, to Chicago at geomagnetic latitude 55° N. He established that cosmic-ray variations were closely related to the magnetic activity of the Sun and could not be attributed to geomagnetic fluctuations or to electrostatic potential differences in the supposed hard vacuum of space, both of which were popularly believed at the time. Then he exploited the great outburst of solar cosmic rays from the famous solar flare of 23 February 1956 to show that the solar cosmic rays arrived directly from the Sun, but were subsequently barred from free escape from the inner Solar System by some sort of magnetic barrier not far beyond the orbit of Earth.

Today, 23 nations use neutron monitors at 51 centers around the world; these centers are part of a network of stations that monitors space weather under the auspices of the National Science Foundation.

Simpson was one of the 12 discipline scientists who organized the scientific program of the 1957–58 International Geophysical Year to study cosmic rays, solar physics, and magnetospheric physics.

By 1959, the space age began to provide opportunities for direct study of fast particles in space. However, the exploitation of opportunities required the development of small, lightweight, low-power, remote-sensing devices that can be carried into space. Over the succeeding decades, Simpson and his associates progressively developed the technology and, by 1985, had achieved a solid-state device the size of a modest lunch box that determines the energy, charge, and mass of all the individual nuclear isotopes through iron and nickel and beyond over a broad range of energy. US and European investigators have since widely adopted this technology.

Over the years, Simpson and his

coworkers have designed and constructed instruments for flight on more than 36 successful space missions. Along the way, they discovered such exotic phenomena as the Jupiter relativistic electron beacon; electrons and protons accelerated in interplanetary shock waves; the anomalous cosmic rays (accelerated in the termination shock of the solar wind); the magnetically trapped radiation belt of Mercury (Mercury had been thought not to possess a significant magnetic field); the astonishing selective acceleration of deuterium and helium-3 in certain flares on the Sun; and the abundances of radioactive cosmic ray nuclei such as beryllium-10, aluminum-26, chlorine-36, and manganese-54. The measured relative abundances showed that the cosmic rays spend some 2×10^7 years entangled in the magnetic fields of the Galaxy and its halo before escaping.

With Anthony Tuzzolino, Simpson developed the novel pyroelectric cosmic dust detector. The instrument played an essential role in the former USSR's Vega 1 and Vega 2 missions to Comet Halley in 1986. The same dust detector was included in NASA's Cassini mission to Saturn (launched in 1997) and the Stardust mission to Comet P/Wild 2 (launched in 1999).

Simpson sponsored 34 PhD students, many of whom are now leaders in the space sciences. He had complete confidence in his cause and in ultimate success, often in the face of discouraging policies and responses from funding agencies. In 1982, he founded the Space Science Working Group to represent and defend the space sciences at NASA and to encourage support in Congress for space sciences programs. He had affection for and took pride in his individual students and associates.

EUGENE N. PARKER

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Roger Elwood Batzel

Roger Elwood Batzel, a nuclear chemist and director of Lawrence Livermore National Laboratory (LLNL) for 17 years, died on 29 July in San Ramon, California, after suffering a massive heart attack.

Roger was born in Weiser, Idaho, on 1 December 1921. He was in the middle of his college education when, because of the US's entry into World War II, he joined the US Army Air Force, where he served as a navigation instructor. In 1945, he returned to the University of Idaho, where he



ROGER ELWOOD BATZEL

earned his bachelor's degree in chemical engineering in 1947.

After graduating, he joined General Electric Co Hanford in Richland, Washington, where he was assigned to work with two visiting scientists in nuclear chemistry who persuaded him to pursue his doctorate. They also recommended him to pioneering nuclear chemist Glenn Seaborg of the University of California, Berkeley, who was awarded the Nobel Prize in Chemistry in 1951.

Roger came to Berkeley in 1948 at Seaborg's invitation. Seaborg became Roger's mentor and the two coauthored several articles on fission in medium-weight elements for *The Physical Review*. After receiving his PhD in nuclear chemistry from Berkeley in 1951, Roger spent two years as a senior chemist with the California Research and Development Corp.

In 1953, one year after LLNL opened its doors, Roger joined the laboratory as an assistant division leader in the chemistry department. He became the department head in 1959. Two years later, Roger's duties were expanded: He became associate director for chemistry and nuclear testing, a position he held from 1961 to 1964. He then served as associate director for chemistry and space relations from 1966 to 1968 and associate director for chemistry and biomedical research from 1969 to 1971.

From the late 1950s to the early 1970s, Roger was active in the Plowshare Program, an effort to harness the power of nuclear explosives for civilian uses, and was a member of the US delegation that pursued this subject with scientists from Europe and the Soviet Union. From 1967 to 1971, he was a member of the Atomic Energy Com-