

WE HEAR THAT

IN BRIEF

Edward Stone was honored in November with the 1999 Carl Sagan Award, presented annually by the American Astronautical Society and the Planetary Society. Stone is the David Morrisroe Professor of Physics at Caltech, a vice president of Caltech, and director of the Jet Propulsion Laboratory.

In September, **Lene Hau**, a member of the Rowland Institute for Science in Cambridge, Massachusetts, and an adjunct professor of atomic physics at the University of Aarhus in Denmark, began her appointment

as a Gordon McKay Professor of Applied Physics and a professor of physics at Harvard University. And Stanford University's **Charles Marcus** will be joining the Harvard faculty this month as a professor of physics.

John Weaver, currently a professor of chemical engineering and materials science at the University of Minnesota, Twin Cities is moving this month to the University of Illinois at Urbana-Champaign, where he will be the head of the materials science and engineering department.

The 1999 Holweck Medal and Prize was presented in October to **Oriol**

Bohigas of the Nuclear Physics Institute in Orsay, France, for his pioneering work on quantum chaos. The award, made jointly by the UK's Institute of Physics and the French Physical Society, is given to a French physicist in odd-numbered years and to a British physicist in even-numbered ones.

Richard Ellis, the former director of the Institute of Astronomy and the Plumian Professor of Astronomy and Experimental Philosophy at the University of Cambridge, England, relocated in December to Caltech, where he is a professor of astronomy and deputy director of the Palomar Observatory.

OBITUARIES

Edwin Thompson Jaynes

Edwin Thompson Jaynes, an innovator in many fundamental aspects of theoretical physics, died after a long illness on 30 April 1998 in St. Louis.

Ed was reared in Iowa. Born on 5 July 1922 in Waterloo, he grew up in Parkersburg. His father died when he was very young, but left a large library and a piano—legacies that stimulated a lifelong involvement with learning and music. Ed attended nearby Cornell College and then the University of Iowa, where he earned a BA in physics in 1942.

After graduating, Ed worked on the theory and application of microwaves—first for Sperry Gyroscope Co and then as a US Navy officer at the Naval Research Laboratory in Washington, DC.

After being discharged from the Navy, he moved to California, where he worked for a summer in the group designing the first linear electron accelerator and enrolled as a graduate student at the University of California's Berkeley campus. In 1947, he transferred to Princeton University, where, in 1950, he completed his PhD thesis on ferroelectricity under the guidance of Eugene Wigner. A modified version of his thesis was published by the Princeton University Press as the inaugural volume of its *Investigations in Physics* series.

Ed spent the next decade at Stanford University's Microwave Labora-



EDWIN THOMPSON JAYNES

tory and physics department. In 1960, he moved to St. Louis to accept a senior faculty appointment at Washington University. He was Wayman Crow Professor of Physics from 1975 to 1992, when he retired following a heart attack.

Ed's searching mind ranged widely over many disciplines within and outside physics. However, his major contributions lay in four areas—namely, applied classical electrodynamics, information theory and statistical mechanics, quantum optics and neoclassical radiation theory, and probability theory and statistical inference. Because it challenged prevailing orthodoxy, much of his work was controversial, and, in some cases, remains so today. But all of it

bears the mark of an extraordinary intellect that sought new foundations for understanding nature.

In 1957, Ed published his first two papers interpreting statistical mechanics in terms of information theory. He derived the Gibbs probability distribution from a principle of maximum entropy subject to the constraints of prior knowledge. Thus, statistical mechanics was, in Ed's view, a form of statistical inference based on partial information, rather than a physical theory. Published in *Physical Review*, against the advice of the referee, this approach has spurred a continuing debate between camps known now as subjectivists and objectivists. Over the years, Ed's subjectivist view has gained many adherents, not least because of the opportunities it opens in nonequilibrium statistical mechanics and in manifold applications of the maximum entropy principle outside physics.

Extending this early work, Ed synthesized the ideas and results of Thomas Bayes, Pierre-Simon Laplace, Harold Jeffreys, Richard Cox, and Claude Shannon into a consistent modern framework of probabilistic reasoning. Vastly influential, these ideas were published in a beautifully composed and argued series of papers that appeared in conference proceedings (it was commonplace for mainstream journals to reject Ed's manuscripts). Among these papers is "How the Brain Does Plausible Reasoning," which originally appeared in 1959 as a report from the Stanford