

## Faber receives Heineman prize for work in astrophysics

The American Institute of Physics and the American Astronomical Society in January presented the 1985 Dannie Heineman Prize for Astrophysics to Sandra M. Faber (University of California at Santa Cruz) at the AAS meeting in Houston. She was cited for "her spirited observational approach, [by which she] has much enriched our knowledge of the basic characteristics of galaxies. By the insight thus gained she has substantially advanced the theory of galaxy evolution."

Faber received her PhD in astronomy from Harvard University in 1972. She then joined the Lick Observatory at the University of California. For her PhD thesis Faber used intermediate-band photometric studies to demonstrate that the integrated colors of elliptical galaxies depend strongly on their luminosities; this finding has since led to detailed studies at Lick and at other observatories of old stellar populations.

Faber has worked extensively toward establishing a metallicity scale for old stellar populations that is independent of the inhomogeneous nature of such systems. In 1973 she proposed, on the basis of her studies of strong-absorption-line strengths in high-surface-brightness galaxies, that the outer, cooler regions of these galaxies had been stripped away by massive companion galaxies. In 1975, she and Robert Jackson, who was then a graduate student, developed what is known as the Faber-Jackson relation, which states that a galaxy's luminosity is proportional to the fourth power of its velocity dispersion. In a series of papers begun in 1975, Faber and colleague John Gallagher established limits on the existence of an interstellar medium in early-type galaxies; she and her co-workers further proposed a mechanism by which gas is removed from these galaxies based on calculations of the rate of expulsion of H I from stars. In 1979 she and Gallagher argued that galaxies are surrounded by huge, massive envelopes of invisible matter, a picture that has since come to dominate modern theories of galactic structure and cosmology. In 1982

Faber used properties of galaxies and galactic clusters to obtain limits on the nature of density fluctuations in the Big Bang. She concluded that the spectrum of initial density irregularities could not have consisted of white noise, as had been thought, but must have been biased toward longer wavelengths. Since 1983 Faber and her colleagues Joel Primack and George Blumenthal have been developing a theory of galaxy formation based on invisible matter. Faber and her colleague David Burstein demonstrated in 1984 that the ratio of hydrogen to metals in the M31 globular clusters is significantly different from that of Galactic globular clusters. Faber was made a full professor and astronomer at Lick Observatory in 1979.



FABER

### in brief

**J. A. Venables**, reader in physics at the University of Sussex, England, has been appointed professor of physics at Arizona State University.

**William G. Harter**, formerly of the Georgia Institute of Technology, has become a professor of physics at the William Fulbright College of the University of Arkansas in Fayetteville.

**Georges M. Temmer** was named University Professor at Rutgers University

last September; he served as director of the nuclear-physics laboratory there for 22 years. **Noemie Benczer-Koller** was named the new director of the nuclear-physics laboratory.

**C. Paul Robinson**, formerly principal associate director for national-security programs at Los Alamos National Laboratory, has joined Ebasco Services in New York as principal scientist and group vice president of advanced technology and special projects.

### obituaries

#### Ernst Stueckelberg

Ernst Carl Gerlach Stueckelberg von Breidenbach died on 4 September 1984, in his 80th year, in Geneva, Switzerland, where he was emeritus professor of theoretical physics at the Universities of Geneva and Lausanne. With his death the world community of physicists loses a colleague of unique originality and depth. His long career started in Basle, Switzerland, where he

was born on 1 February 1905, and covered a wide range of topics, from molecular spectra to quantum field theory, general relativity and thermodynamics.

After a stay with Arnold Sommerfeld in Munich, Stueckelberg completed his PhD in Basle in 1927 and then left Europe to become a research associate at Princeton University. There he discovered, together with J. G. Winans, the reason for the continuous spectrum of the hydrogen molecule  $H_2$  and thus