

we hear that

the ASP Amateur Achievement Award will go to Frank Bateson of New Zealand. The award ceremonies will take place in Tucson at the Society's annual scientific meeting.

George Herbig, professor of astronomy at the University of California, Santa Cruz, won the 82nd edition of the Bruce Medal in recognition of his work on T-Tauri stars (stars formed a relatively short time ago, less than about 4×10^8 years) and on the nebulous "knots" found in star-forming regions now called Herbig-Haro objects (after their co-discoverers). Herbig earned his PhD from the University of California, Berkeley, in 1948; he has been associated with Lick Observatory since 1944. The American Astronomical Society awarded Herbig its 1955 Warner Prize.

The Klumpke-Roberts Award will be given to Walter Sullivan, science editor for *The New York Times*. The award is presented each year for outstanding contributions to public understanding and appreciation of astronomy. Sullivan is author of two books on astronomy, *We Are Not Alone* and *Black Holes*. He was recently honored by the National Academy of Science (see preceding story).

The Trumpler Prize is awarded to recognize outstanding doctoral theses in astronomy. For the first time in the history of the prize, two astronomers have been selected in the same year: James Liebert, for his dissertation on white dwarfs and Luis Rodriguez for his study of the nature of various gas complexes found at the center of our Galaxy.

Frank Bateson, a retired New Zealand accountant and company manager, was recognized for his activities over a long career in amateur astronomy. In 1927 he founded the Variable Star Section of the Royal Astronomical Society of New Zealand and he has since made over 100 000 observations of variable stars.

Six physicists among IEEE award winners

Physicists William Shockley, Robert Adler, Simon Ramo, Aldert van der Ziel, William M. Webster and Raymond W. Sears were among those honored by the Institute of Electrical and Electronics Engineers at a conference held in Boston last May.

The 1980 IEEE Medal of Honor was awarded to William Shockley for his invention, with John Bardeen and Walter H. Brattain, of the transistor. In 1956 the trio shared the Nobel Prize for this work. Shockley holds an appointment as emeritus professor of electrical

engineering at Stanford University.

Robert Adler, director of research at Extel Corp, Northbrook, Illinois, won the Edison Medal "for many inventions in the fields of electronic beam tubes and ultrasonic devices, and for leadership in innovative research and development."

Vice-chairman of the board at TRW, Inc, Simon Ramo was given the Founder's Medal in recognition of his leadership in the application of systems engineering to electronics.

Aldert van der Ziel was presented the Education Medal "for leadership in engineering education and for contributions to noise theory in electronic devices." Van der Ziel is a professor of electrical engineering at the University of Minnesota, Minneapolis.

William M. Webster was cited for his "sustained leadership in the management of research and development" in winning the Frederick Philips Award. He is vice president of RCA Laboratories.

Raymond W. Sears, retired member of Bell Laboratories, won the Haraden Pratt Award for his long-term service to the IEEE.

Two United Technologies Research Center scientists have received awards from the Institute of Electrical and Electronics Engineers. **Anthony J. DeMaria**, head of the Center's electromagnetics and physics laboratories, was presented the 1980 Morris N. Liebmman Award and **Elias Snitzer**, head of

the applied physics laboratory, was given the 1979 Quantum Electronics Award.

William David Wright, formerly professor of physics at Imperial College of Science and Technology, London, now retired, has won the Inter-Society Color Council's Macbeth Award.

Rafael Tsu has become a senior scientist at Energy Conversion Devices, Inc. Before his move Tsu worked at the IBM Watson Research Center.

Uday K. Sengupta has joined Tachisto Inc as senior research and development scientist. He was previously with the Honeywell Inc Electro-Optics Center.

Simon D. White, formerly of the Institute of Astronomy, Cambridge University, has been appointed a senior fellow at the University of California, Berkeley Space Sciences Laboratory.

James Hillier, retired executive vice president and chief scientist of RCA, and **Major Edwin Armstrong** (deceased) have been elected to the National Inventors Hall of Fame. Hillier is credited with the invention of the electron microscope; Armstrong with the superheterodyne radio receiver.

The Institute for Physical Science and Technology of the University of Maryland has named **Robert W. Zwanzig** Distinguished Professor of Science and Technology.

obituaries

Vladimir Čermák

Vladimir Čermák, senior scientist of the J. Heyrovský Institute of Physical Chemistry and Electrochemistry, Czechoslovak Academy of Sciences, Prague, died on 4 January 1980.

Čermák was born in České Budějovice, Czechoslovakia in 1920 and received his early schooling in Prague. World War II delayed his university studies; during those years he was employed in the chemical industry. In 1945 he entered the School of Natural Sciences, Charles University, in Prague. He studied under Miroslav Brdička and Jaroslav Heyrovský and received his degree in 1949 for work in polarography. Čermák then helped found the Laboratory of Physical Chemistry, Czechoslovak Academy of Sciences. The laboratory later developed into the institute to which he was to be attached for all of his life. At the new laboratory his interests shifted



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International Summer Schools:**

Metrology and Fundamental Constants

Proceedings of the International School of Physics "Enrico Fermi", Course LXXV, Varenna Italy, 24 July - 5 August, 1978.

edited by A. FERRO MILONE and P. GIACOMO

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CONTRIBUTORS: A. Allisy, M. Ardit, C. Audoin, A. Bray, V. P. Chebotayev, E. R. Cohen, F. Combley, R. D. Deslattes, A. Ferro Milone, P. Giacomo, H. Korte, S. Leschiutta, A. de Marchi, B. W. Petley, E. Picasso, T. J. Quinn, G. P. Soardo, J. Terrien, A. H. Wapstra.

Intermolecular Spectroscopy and Dynamical Properties of Dense Systems

Proceedings of the International School of Physics "Enrico Fermi", Course LXXV, Varenna Italy, 24 July - 5 August, 1978.

edited by J. VAN KRANENDONK

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This volume contains a unique review of the theoretical and experimental aspects of collision-induced spectroscopy and collision-induced light scattering, and of the rotational and vibrational properties of molecules in dense systems. An introduction to linear response theory and correlation functions, and a review of the theory of intermolecular spectra in gases are followed by lectures on line-shape problems, intercollisional interference effects, determinations of molecular constants, and rotational and vibrational relaxation. The role of computer simulations is critically reviewed, and the volume ends with lectures on the Raman and Brillouin spectroscopy of simple molecular solids.

The aim of this publication is not only to be of use for those working in the above areas, but also to stimulate the interest of others, both experimentalists and theorists.

CONTRIBUTORS: U. Balucani, F. Barocchi, G. Birnbaum, S. Bratos, U. Buontempo, S. Cunsola, P. Dore, D. Frenkel, W. M. Gelbart, Y. Guissani, S. Kielich, J. C. Leicknam, J. C. Lewis, T. A. Litovitz, P. Manselli, V. Mazzacurati, C. J. Montrose, M. Nardone, J. D. Poll, C. Pona, J. S. Rowlinson, G. Signorelli, I. F. Silvera, J. E. Sipe, W. A. Steele, H. N. V. Temperley, V. Tognetti, R. Vallauri, J. Van Kranendonk, S. Weiss, M. Zoppi.

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Proceedings of the 11th International Conference on the Physics of Electronic and Atomic Collisions (ICPEAC XI), Kyoto, Japan, August 29 - September 4, 1979

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Invited Papers

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The Kyoto Conference is one of a series of conferences, the first of which was held in New York in 1958. They are now held every two years. This Conference dealt with two-body interactions between ions, atoms, simple molecules, electrons (and positrons) and photons. The collision energies of interest range from subthermal to millions of electron volts. These two volumes together form the official scientific record of the Kyoto ICPEAC.

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obituaries

from electrochemistry to new areas of chemistry and physics. He was a member of a team of four who built the first mass spectrometer in Czechoslovakia in the early 1950's. After some early work on analytical aspects of mass spectrometry, Čermák's research interests turned to collision processes investigated by means of mass spectrometry. In the ensuing years his research group made several essential contributions to the then rapidly developing field of ion-molecule collision processes. Studies of ionization in collisions of electronically excited metastable neutrals with molecules (Penning ionization) led him to the electron spectroscopy known as Penning ionization electron spectroscopy (PIES)—the area of chemical physics he is credited with founding. The years from 1965 to 1977 were characterized by vigorous activity and leadership in this field. In the last two years of his life his work was at times restricted by the advancing disease which he fought bravely, but which led eventually to his death.

Čermák's major scientific contributions came in the fields of mass spectrometry (collision processes) and of electron spectroscopy. His early work on ion-molecule chemical reactions showed the role of electronic excitation energy in these processes. A simple change in the operating conditions of the Nier-type ion source for an ordinary mass spectrometer allowed his and other research groups to study charge-transfer processes before special beam machines were generally available. The idea of studying the so-called break-down pattern of an excited polyatomic molecular ion by imparting a specific amount of excitation energy through charge transfer came from these early investigations. His paper on electron-impact production of highly excited Rydberg states in noble-gas atoms was one of the pioneering works in this area. Studies of associative and Penning ionization in collisions of metastable noble gas atoms and molecules in Čermák's laboratory led to the understanding that, by accurate measurement of energy of the released electron, detailed information could be obtained on electronic and internal states of the ion formed. This was the beginning of the PIES method, which has since yielded not only data analogous to those from photoelectron spectroscopy of molecules, but also information on the colliding-particle interaction. He then exploited the method beyond the PIES limits; electron spectroscopy of autoionizing excited atoms formed in dissociative collisions of fast atoms and molecules may serve as an example of it.

Čermák served for many years as the

head of the department of mass spectrometry of the Institute in Prague, and in the last years of his life he helped to organize and was temporarily in charge of the ESCA center of the institute. He was a visiting fellow at the Joint Institute for Laboratory Astrophysics, University of Colorado, Boulder in 1964-65 and in the summer of 1969, and a visiting professor at the Université de Paris-Sud, Orsay (1969-70). Čermák served for many years on the General Committee of the International Conference of Electronic and Atomic Collisions and he was a member of the Editorial Board of the *Journal of Electron Spectroscopy*. In 1968 he was awarded the title Doctor of Sciences, a high scientific honor in Czechoslovakia. In 1954 he was the recipient of the Czechoslovak State Prize for this scientific work and in 1977 he was awarded the Marcus Marci Medal for his contributions to the advancement of spectroscopy in Czechoslovakia.

Čermák's contributions to the field of atomic and molecular physics have achieved a worldwide recognition. He was a warm person; an enthusiast who was always younger than age showed, and an affectionate admirer of nature and wildlife. His friends and colleagues will remember not only personal charm (enhanced by his ability to converse freely in five languages), but also his firm and uncompromising stands when important issues were at stake. Čermák's younger colleagues will miss the advice, support and stimulation that he provided to so many.

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Cecilia Payne-Gaposchkin

Cecilia Payne-Gaposchkin, Phillips Professor of Astronomy Emerita at Harvard University and recipient of the American Astronomical Society's prestigious Henry Norris Russell Lectureship for 1977, died on December 7, 1979.

Born in Wendover, UK, in 1900, Payne-Gaposchkin grew up in England and entered Newnham College of Cambridge University in 1919 to study natural sciences. Her fascination for astronomy was initially inspired by one of Sir Arthur Eddington's lectures on relativity. After completing the tripos examinations, she crossed the Atlantic to study with the newly appointed director of Harvard Observatory, Harlow Shapley.

In 1925, Payne-Gaposchkin received the first PhD in astronomy awarded by Harvard or Radcliffe—as a woman her