

CENTREFOLD

Professor W. Ian Axford



To be Vice-Chancellor of Victoria University of Wellington

Ian Axford was born in Dannevirke in 1933, went to Napier Boys' High School and then to the University of Canterbury. From there he graduated with the two degrees of M.E. (with distinction) and M.Sc. (with first class honours, in mathematics). He joined the NZ Defence Scientific Corps and went to do research in fluid mechanics at Manchester, from where he got a Ph.D. in 1960. After brief periods at Cambridge, with the Defence Research Board of Canada and the NZ Air Force he went to Cornell and became, in 1966, Associate Professor of Astrophysics and Professor of Astronomy. From 1967 to 1974 he was Professor of Physics, Applied Physics and Information Science at the University of California at San Diego. Since 1974 he has held the post of Director at the Max-Planck-Institut für Aeronomie in Germany, and was made Honorarprofessor der Universität der Göttingen in 1978.

From the beginning his research interest has been magnetohydrodynamics. His early work pioneered the study of the dynamics of the earth's magnetosphere and its interaction with the solar wind. The Axford-Hines theory of convection propounded in 1961 in a classic paper entitled "A Unifying Theory of High Latitude Geophysical Phenomena" remains the basis for present-day studies of magnetosphere dynamics and sub-storm processes.

Satellite observations gave a boost to his work and in 1965 he suggested the importance of steady-state reconnection of field lines in the geomagnetic tail as an energy source for night-side auroral zone phenomena. He has always stressed the role of convective flow of plasma associated with the electric fields of the magnetosphere, an effect which was verified in the early 1970's.

Dr Axford has contributed to the study of cosmic rays in the solar wind and the properties of plasmas in astrophysical settings. He has been involved with the space probes launched by NASA and the European Space Research Committee and has modelled the Jovian magnetosphere.

His published work of 150 papers and articles on these subjects has been recognized by a number of awards, including the American Geophysical Union John Adam Fleming Medal and the AIAA Space Science Award.

He has been an active member of a number of American and other scientific societies. He has served on international organizations and advisory boards and was President of Commission 49 of the International Astronomical Union during 1974--1976. There are 10 important geophysical and astrophysical publications which he has served, or is still serving, in some editorial capacity.

The NZMS welcomes the return to New Zealand of so distinguished an applied mathematician. We hope to share in some of the expected benefits.