

PROFESSOR DEREK H. MARTIN

10 July 1996

Mr Chairman, I present Professor Derek Martin.

Derek Martin was educated at the University of Nottingham where he received his BSc and PhD degrees. He joined Queen Mary College as Assistant Lecturer in 1954, became Lecturer in 1958, Reader in 1963, Professor in 1967, and Emeritus Professor on retirement in 1994. He had been Head of the Physics Department and Dean of the Faculty of Science, and a University Senator.

He arrived at Queen Mary College committed to a search for a better understanding of the exotic phenomena of superconductivity and of strong magnetism in solids. He decided to seek ways to generate and detect electromagnetic waves in an unexplored part of the spectrum, that between the infrared and microwaves, wavelengths around 1 mm, because he believed that such waves would probe the large-scale collective motions of atoms.

Before that could be done there were substantial technical impediments for him to overcome. One of his first steps was to build a miniature refrigerator to reach temperatures within a degree or two of absolute zero and to operate a superconducting detector at this ultra-low temperature in order to be able to detect signals of extremely low strength. This was in 1954, when the Department of Physics was in the east wing of this building - he built his apparatus right above what is now your own splendid office, Principal.

His belief was soon proved to be right and he embarked on the central-path of his scientific work: the development of ever-more subtle techniques for detecting and analysing submillimetre waves and applying them in studies of the structures of matter. This has taken him, and colleagues in the College, beyond solid state physics, into astronomy and cosmology, into the remote-sensing of ozone-related stratospheric chemistry from aircraft, high-altitude balloons, and satellites, and into diagnostic studies of energy-generating plasma machines. His work rapidly gained wide recognition and many visitors have come to the College to work with him and to learn the elegant and sensitive measurement techniques he had developed, then to return to pursue such work in their own laboratories in the USA, Japan, Australia, Canada, Italy, Germany, and China. In recognition of the seminal importance of his work in measurement science he was awarded the K. J. Button Prize, also the NPL Metrology Award, and he was Kelvin Lecturer of the Institution of Electrical Engineers.

As a member and chairman of the Astronomy Committees of the Science Research Council through the '70s, he was centrally involved in proposing and procuring large telescopes which covered new ranges of wavelength and which allowed the resurgence of top-class astronomy in the UK through the '80s and '90s. In that context also, he initiated the participation of the UK in the first satellite-borne infrared telescope, IRAS, which revealed the rich infrared sky which had hitherto been obscured by the Earth's atmosphere. Many of his colleagues in the College have been leading figures in the use of

these, and later, ground-based and satellite-borne infrared and submillimetre telescopes.

By 1960 there was a fine new building for the physics department, which was formally opened by Professor Sir Harrie Massey, a renowned scientist and science-policy-maker, with a speech full of optimistic anticipation for the future of physics in the universities. Derek Martin had played a major role in the planning of this Building, which we still enjoy, and, in fulfilment of Sir Harrie's optimism, the Department developed into one of the strongest physics departments the country. By 1970 Professor Martin was its Head. Today we remain optimistic, and I know that professor Martin is appreciative of the College's support for the Department.

He had spent 1966 as Visiting Professor at the University of California at Berkeley at the time of student unrest there. This perhaps stood him in good stead because, soon after his return, he was elected Dean of the Faculty of Science in the College, just as the student revolts spread from the USA to universities in Europe. It occurs to me, Chairman, that proud parents of those graduating here today might well themselves have been students at that time, among the more revolting perhaps!

Queen Mary College was less disrupted than many of the other leading universities here. One possible factor in this was the decision, to replace the then-conventional rigid science-degree programmes with a modular science-degree geared to the developing interests of individual students. As Dean for Science, Professor Martin had to find a pattern of implementation persuasive to senior and strong-minded academic colleagues, across the Faculty. That pattern has since spread to other Faculties in the College, and to many other universities.

He was a Senator of the University from 1980 to 1987. He was Editor of the prestigious journal *Advances in Physics*. For 10 years he was Honorary Secretary of the Institute of Physics and shaped it into the influential and vigorous body that it is today. He will shortly be leader of the United Kingdom delegation to the International Union of Pure and Applied Physics.

However, notwithstanding these many and diverse activities, he has remained primarily a teacher and researcher in his subject. His work has contributed substantially to the College's success and high international reputation.

Mr. Chairman, I ask you to admit Derek Humphery Martin as an Honorary Fellow of the College.

Peter Kalmus 10 July 1996