



Obituary

Douglas Walter Noble Stibbs

17 February 1919 – 12 April 2010



Walter Stibbs, writing *The Outer Layers of a Star*.

Professor Walter Stibbs, FRAS, FRSE, was an astronomer and astrophysicist of international standing who, for thirty years, held the Napier Chair of Astronomy at the University of St Andrews, Scotland, and the associated post of Director of the University Observatory. His retirement in September 1989 not only deprived the University of a colourful personality but also perhaps marked the end of the era of the traditional academic. A native of Australia, but with Scottish ancestors, Walter was born in Sydney in 1919 and educated at Sydney Boys' High School. He entered Sydney University in 1937, graduated B.Sc. in 1942 with first class honours and the University Medal in Physics, and M.Sc. in 1943. In 1954 he graduated D.Phil. from the University of Oxford.

As an undergraduate he worked for some time as a vacation student at the Commonwealth Solar Observatory on Mount Stromlo, Canberra, having been interested in the stars since childhood. He arrived at Mount Stromlo in December 1939, on the same day as the new Director, Dr (later Sir) Richard van de Riet Woolley, who later became Astronomer Royal for England. The two men were to become lifelong friends.

As a research assistant, Walter took part in some of the earliest optical munitions work undertaken at the Observatory. He designed a folded optical system for a gun-sight, which went into production later in the Second World War, and a sun-compass for use in desert warfare. From 1942 to 1945 Walter spent three years as an assistant lecturer in the Department of Mathematics and Physics at New England University College, Armidale (now the University of New England). This period was interspersed with wartime research work on submarine detection for

the Royal Australian Air Force, and he also wrote a thesis for his M.Sc. degree entitled *The Ultra-violet Emission from the Sun*.

In 1945 he returned to the Commonwealth Solar Observatory, where he was a scientific officer, then senior scientific officer. Here he worked on photoelectric photometry and theoretical astrophysics, and wrote a book, entitled *The Outer Layers of a Star*, co-authored with Dr Woolley. Some of his papers published at this time have become classics, opening new horizons for stellar physics. His book dealt mainly with the analysis of the observable radiation from a star, particularly with reference to the formation of the continuum and the line spectrum. In these early years Walter did some of the most significant astronomical research of his time, both observational and theoretical.

In 1949 Walter married Margaret Calvert, also a science graduate of the University of Sydney, and in 1950 he was awarded the prestigious Radcliffe Travelling Fellowship by the University of Oxford to carry out observations at the Radcliffe Observatory in Pretoria, South Africa and to work at the University Observatory in Oxford, England. All his research was done in the days when observational astronomers had to wear padded clothing at night to keep warm and before the days of electronically controlled telescopes and computers. His calculations in Oxford were made on a hand-operated Brunsviga 10 and his D.Phil. thesis typed on an ancient typewriter!

At Oxford in 1954, he completed his D.Phil. with a thesis entitled *Galactic Cepheid Variables* and two years later another thesis, *The Differential Galactic Rotation of the System of Cepheid Variable Stars*, won him the Johnson Memorial Prize and Gold Medal for the Advancement of Astronomy and Meteorology. Jobs in astronomy were scarce at this time so he accepted a position as a principal scientific officer with the United Kingdom Atomic Energy Authority at Aldermaston, and from 1955 to 1959 was a consultant in theoretical astrophysics in atomic weapons research. Two daughters, Helen and Elizabeth, were born during this time in England.

In 1959 Walter was appointed Napier Professor at the University of St Andrews, Scotland, and Director of the University Observatory, a position he held for the next thirty years. On the occasion of his retirement in 1989 Dr T.R. Carson wrote:

His main astronomical interests were in stellar kinematics and galactic rotation on the one hand, and radiative transfer in stellar and planetary atmospheres on the other. These, in a fashion, reflected his twin fascinations with instruments and mathematics, that is to say, with observational and theoretical astronomy. These topics were to remain of abiding interest throughout his career, and were the subjects on which he preferred to lecture to honours students. He had a particular attraction to mathematics, especially statistics, and always enjoyed the exercise of looking at elementary things from an advanced standpoint. As a teacher he was formal and meticulous, and his blackboards were a model of orderliness and legibility.

Concurrently with this work at the University Observatory, as well as service on Faculty, Senate and numerous committees within the University, most notably the Awards Committee, Professor Stibbs found time to make

substantial contributions organisationally to the wider world of astronomy. He was chairman of the Astronomy Policy and Grants Committee of the former Science Research Council during the critical phase of the development of the Northern Hemisphere Observatory and during the time when the Anglo-Australian Telescope was under consideration. He also served on a number of other Science Research Council committees; on the Council of the Royal Astronomical Society, including a term as Vice-President; on the Council of the Royal Society of Edinburgh; and on the Finance Committee of the International Astronomical Union. Naturally his many involvements were only made possible by the long hours he worked and at the expense of the time he could devote to teaching and personal research. However he always kept closely in touch with all that was going on and maintained a lively and informed interest in the work of his colleagues, whom he was ever ready to encourage and support. Behind the scenes Professor Stibbs showed a deep concern for the welfare of the individual, student, staff or other, who suffered any misfortune or needed help.

In 1961 Walter was elected a Fellow of the Royal Society of Edinburgh and was a member of its council from 1970–1972. He held several visiting professorial appointments—at Yale University Observatory 1966–1967, the University of Utrecht 1968, and the Collège de France 1975–1976, where he was awarded the *Medaille du Collège*. From 1973–1982 he was a member of the National Centre for Scientific Research (CNRS) Committee for the Observatoire de Haute Provence, of which he was the first foreign member.

In 1989 he retired from the University of St Andrews and, after an absence of nearly forty years, returned to live in Canberra where his astronomical career had commenced. Here he became a Visiting Professor at the Astrophysical Theory Centre in the School of Mathematical Sciences at the Australian National University, and also a Visiting Fellow in the Research School of Astronomy and Astrophysics at the Mount Stromlo Observatory. He gave lectures on both radiative transfer and astronomical statistics. The fire of 2003 destroyed his study at Mount Stromlo containing all his historic and irreplaceable books and papers and in the same year he suffered the tragic loss of his younger daughter Elizabeth. For a few more years he continued to work part time in the Mathematical Sciences Institute but eventually his eyesight began to fail and shortly before his ninety-first birthday his visits there ceased.

During the years that Walter was the Napier Professor of Astronomy in the University of St Andrews, the Department of Astronomy and Astrophysics was always quite small, but the true measure of its success is to be found in its work in teaching and research and the impact of these both within and beyond St Andrews. It turned out a remarkable number of successful astronomers, and some of the most important and innovative projects of recent years are led by Walter's former students who may be found in observatories and universities worldwide.

Walter is survived by his wife Margaret, daughter Helen, and one granddaughter.

Margaret Stibbs, Canberra