Hermann Alexander Brück

Hermann Alexander Brück died on 4th March 2000. He had retired from the joint post of Regius Professor of Astronomy at the University of Edinburgh and Astronomer Royal for Scotland in 1975, having transformed the Royal Observatory Edinburgh into a major player in world astronomy.

Born in 1905 in Berlin, he attended the universities of Kiel, Bonn and Munich. At the latter, working amongst many of the great physicists of the twentieth century, his doctoral studies - on the wave mechanics of crystals – were supervised by Arnold Sommerfield. His interest in astronomy had been ignited early in life, and in the new physics in which he was immersed it was natural that he should turn to astronomical spectroscopy. After completing his doctoral studies, he followed his friend A. Unsöld into this field by securing a post at the Potsdam Astrophysical Observatory. There he joined the physics colloquium which included von Laue, Grotrian and Einstein.

In 1937 he moved from Potsdam to Cambridge, via a short appointment at the Vatican Observatory, to join the circle around Sir Arthur Eddington, whom he regarded as leader of the new astrophysics. Brück became in time Assistant Director of the Observatories and John Couch Adams Astronomer, specialising in solar spectroscopy. Here he taught a well–remembered course in classical astronomy, and started the student astronomical society that has been nursery to many distinguished astronomers.

In 1947, at the invitation of Eamon De Valera, he moved to Dublin and took charge of the moribund Dunsink Observatory, transforming it into the centre of a vigorous astronomy programme as part of the Dublin Institute of Advanced Studies, where he enjoyed the company of Erwin Schrödinger. In 1950, the Observatory, with the Royal Irish Academy, hosted the first meeting of the Royal Astronomical Society furth of the United Kingdom, and in 1955 the International Astronomical Union held their triennial Assembly in Dublin. At this, the observatory demonstrated equipment for photoelectric photometry developed by M.J. Smyth, who had been Brück's student in Cambridge; and the UV solar spectroscopy which extended the Utrecht Atlas and formed part of the revised Rowland tables of the Solar spectrum and in which work Brück's wife (née Mary Conway) had been a leading figure.

Herman Brück moved in 1957 to Edinburgh. With typical vision and drive he immediately started the transformation of the Royal Observatory into an internationally-ranked research centre. He collected at Edinburgh a team of astronomers and engineers, headed initially by P.B Fellgett and later by V.C. Reddish, with the skills he required for creation of new automated instrumentation for scanning spectra, for measuring star and galaxy images, and for operating telescopes remotely.

The first projects were the adaptation of instruments to scan automatically the contents of photographic spectra onto paper tape for processing by computer, and the concomitant creation of software for data reduction. This technology enabled spectra to be reduced in minutes rather than months, changing the whole focus of astronomers' work.

The next major undertaking was the design and construction of machines to scan the myriads of stellar images on a photographic plate, and the acquisition of observing facilities that would produce high quality source material. This programme gave birth to a dynasty of scanning machines (GALAXY, COSMOS and SuperCOSMOS), and to the evolution of the use of Schmidt telescopes for precision mass photometry of stars and galaxies. This went hand-in-hand with the setting up of overseas observing stations. Brück's warm relations with astronomers at Rome University (particularly M. Cimono and L. Gratton) made it natural to capitalise on good Italian weather by siting a 16/24 inch Schmidt telescope at Monte Porzio near Rome in 1967; later the UK Schmidt Telescope at Siding Spring in Australia would be operated from the Royal Observatory Edinburgh. These developments put Edinburgh in the lead in the technological revolution sweeping through astronomy.

In 1965, at a critical time for British observational astronomy, and as the Anglo-Australian Observatory was coming into being, Hermann Brück first proposed that a large (150 inch diameter) telescope be built in the Northern hemisphere. The deliberations over the possible organisation of such a facility by the Northern Hemisphere Review Committee during 1969-70 were protracted, and constituted the only anxious period of his career, when the future of the Royal Observatories appeared to be under threat. Site testing was started and carried out under Edinburgh management. The final outcome was the Northern Hemisphere Observatory operated by the Royal Greenwich Observatory on La Palma, only an island away from where Piazzi Smyth in the previous century had demonstrated the excellent

properties of the atmosphere; and the UK Schmidt telescope which, run by the Royal Observatory Edinburgh (the project directed by V.C.Reddish), completed an internationally important survey of the southern sky.

During this empyrean phase, the Royal Observatory Edinburgh was charged with the commissioning and operation in Hawaii of the UK Infrared Telescope, the first four metre class telescope devoted entirely to infrared observations, which had a major impact on the direction of astrophysical research.

In parallel with this scientific development, astronomy teaching at the university expanded, with a new honours degree in Astrophysics starting in 1967. Brück was an enthusiastic teacher and encourager. On arrival in Edinburgh, he started the student astronomical society and gave it access to Observatory facilities, and the Astrophysics degree grew out of courses which he offered in the Physics degree at Edinburgh. For a period he served as Dean of the Faculty of Science.

On his retirement in 1975, he and his colleague and wife Mary launched into historical studies of nineteenth century astronomy. This led to the definitive work on the life of one of his predecessors, Piazzi Smyth, *The Peripatetic Astronomer*, as well as a history of Edinburgh Astronomy, *The Story of Astronomy in Edinburgh*; and an extended paper in *Vistas in Astronomy* describing Lord Crawford's Observatory at Dunecht, which was the parent to the nineteenth century rebirth of the Royal Observatory Edinburgh.

Throughout his busy career he served as member and councillor of the Pontifical Academy of Sciences, and was proud and delighted when at the age of 90 he was made Knight Grand Cross of St Gregory the Great, the highest possible distinction. He was made CBE in 1966 for his work at Edinburgh and was awarded honorary degrees by the National University of Ireland (1972) and the University of St Andrews (1973). He was a Member of the Royal Irish Academy (1948), Member of the Akademie der Wissenschaften und der Literatur, Mainz (1955) and a Fellow of the Royal Society of Edinburgh (1958) where he served on Council from 1959 to 1962.

Despite his personal drive and the lasting success it brought, and despite his awe-inspiring and elegant presence, he was a modest and gentle man, seen to be best effect in the heart of his family.

Peter Brand

Hermann Alexander Brück. CBE, D.Phil (Munich), D. Phil Habil (Berlin), Ph.D (Cantab), Hon D.Sc (NUI, St Andrews), MRIA. Born 15 August 1905, elected FRSE 3 March 1958, died 4 March 2000.