



## Hermann A. Brück



Berlin, Germany, 15 August 1905 - Edinburgh, Scotland, UK, 4 March 2000

**Title** Professor of Astronomy, University of Edinburgh, UK.

**Nomination** 5 April 1955

**Commemoration** – Hermann Brück was a member of the Pontifical Academy for forty-five years. In the course of his long, cosmopolitan life he contributed greatly to astronomy – especially to the modernisation of observatories and the improvement of observational techniques.

He was born in 1905, the only child of Hermann Heinrich Brück, an officer of the Prussian army killed in 1914 at the Battle of Lodz. He attended the Kaiserin Augusta Gymnasium in Charlottenburg. His mother would have preferred him to become a lawyer, but his uncle, a distinguished bacteriologist, argued that science could also be a respectable profession.

He started his university career in Kiel; but he found no inspiration there, and moved on after one semester. He was far more fortunate in Munich, where he completed his first degree. He was taught by the legendary, charismatic physicist Arnold Sommerfeld, in the exciting years when quantum mechanics was being formulated – indeed, he attended the colloquium where Heisenberg first presented the famous ‘uncertainty principle’. He obtained his doctorate in 1928 for work on the physics of crystals. Sommerfeld then encouraged him to read Arthur Eddington’s recently-published book on ‘The Internal Constitution of the Stars’. Brück moved to an astronomical post at Potsdam, and within a few years became a lecturer at the University of Berlin, where luminaries like Max von Laue, Erwin Schrödinger and Albert Einstein were on the faculty.

Brück left Germany abruptly in 1936, when Nazi aggression worsened. He came for a year to the Vatican Observatory in Castel Gandolfo. This was a formative period both scientifically and spiritually. He was received into the Roman Catholic Church by Romano Guardini and Johannes Pinski, two of the most distinguished theologians of the age: his intense commitment to the Church continued throughout his long life.

His next move was to the Cambridge Observatories in England, in 1937. After war broke out, he was interned as an enemy alien, but within six months Eddington secured his release, and he returned to a post of greater responsibility in Cambridge. But in 1947 he received a personal invitation from Eamon de Valera, then Prime Minister of the Irish Republic, to become Director of the Dunsink Observatory and Professor of Astronomy at the new Dublin Institute for Advanced Studies, where he joined his friend Erwin Schrödinger, who had been invited to be Professor of Theoretical Physics.

After a successful decade in Ireland he moved again. On the personal initiative of Sir Edward Appleton, then Vice-Chancellor of Edinburgh University, he was invited to become Director of the Royal Observatory in Edinburgh, and Astronomer Royal for Scotland. Brück’s personal scientific interests were in the physics of the interstellar medium, questions of stellar evolution and the formation of stars from diffuse interstellar material. But his impact was wider because he had a natural authority, and proved an effective innovator. During his tenure, the observatory staff numbers expanded from eight to more than a hundred. He fostered the work of Fellgett on automatic plate scanning machines, and that of Reddish on new telescopes. He thereby prepared the way for the pioneering Cosmos High-Speed Measuring Instrument, the ‘Schmidt telescope’ in Australia, as well as the UK Infra-Red Telescope and the James Clerk Maxwell Radio Telescope in Hawaii. He championed the establishment of observing stations in climates better than that of Great Britain and was a prime advocate of a UK Northern Hemisphere Observatory in the Canary Islands. The Edinburgh Observatory still goes from strength to strength as a major astronomical centre, and its standing owes a great deal to Brück’s far-sighted leadership.

Bru#ck continued living near Edinburgh with his second wife, Mary, throughout his long and active retirement. (His first wife, Irma, had died in 1950). Mary, who survives him, has herself a fine record as a professional astronomer. Hermann and Mary produced a highly readable biography of the eccentric nineteenth-century astronomer Charles Piazzi Smyth – one of Bru#ck's predecessors in Edinburgh who pioneered stereoscopic photography but gained embarrassing notoriety through his obsession with the numerology of the Great Pyramid. The Bru#cks also wrote a history of astronomy in Edinburgh, tracing its emergence back to the Scottish enlightenment.

The Pontifical Academy meant a great deal to Hermann Bru#ck. He was proud to have been elected when Georges Lemaître was President, and to have known him well. He gained special satisfaction from the memorable Study-Week which he organised on the theme 'Astrophysical Cosmology'. This took place in 1981 – a time when new links between cosmology and physics were being perceived. The meeting gathered together an outstanding group of scientists; the proceedings, beautifully edited, came out promptly and were widely influential. He served on the Academy's Council for twenty years. And he lived long enough to be honoured for his services: on his ninetieth birthday Pope John Paul II appointed him Knight Grand Cross of the Order of St. Gregory the Great. Those of us who were privileged to know Hermann Bru#ck will cherish the memory of a dedicated scientist whose courteous dignity overlay a brilliant intellect and a firm faith.

Martin J. Rees

### **Summary of scientific research**

Problems in Laboratory, Solar and Stellar Spectroscopy. Design of Advanced Instrumentation for Observation and Analysis in Astrophysics. Historical Studies in 19th Century Astronomy.