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Summary Article: **Gold, Thomas (1920–2004)**

From *The Hutchinson Dictionary of Scientific Biography*

Place: United States of America, Austria

Subject: biography, astronomy

Austrian-born US astronomer and physicist who carried out research in several fields but remains most famous for his share in formulating, with Fred Hoyle and Hermann Bondi, the steady-state theory regarding the creation of the universe.

Gold was born in Vienna on 22 May 1920. He received his university training at Cambridge University, where he earned his bachelor's degree in 1942. Elected a fellow of Trinity College, Cambridge, in 1947, he lectured in physics at Cambridge until 1952. From then until 1956 he was chief assistant to Martin Ryle, the discoverer of quasars, later to become Astronomer Royal. In 1956, Gold emigrated to the USA where, two years later, he became professor of astronomy at Harvard. At Cornell University from 1959, he was director of its Center for Radiophysics and Space Research until 1981 and professor of astronomy 1971–86 (emeritus from 1987). Gold served as an adviser to NASA and was a member of the Royal Astronomical Society, the Royal Society, and the National Academy of Sciences.

The question of the conditions surrounding the beginning of the universe has fascinated astronomers for many centuries. The Big Bang theory, developed by George Gamow and others, was paralleled in 1948 by the steady-state hypothesis put forward by Gold, Bondi, and Hoyle.

The steady-state theory assumes an expanding universe in which the density of matter remains constant. It postulates that as galaxies recede from one another, new matter is continually created (at an undetectably slow rate). The implications that follow are that galaxies are not all of the same age, and that the rate of recession is uniform.

Evidence began to accumulate in the 1950s, however, that the density of matter in the universe had been greater during an earlier epoch. In the 1960s, microwave background radiation at 3K (−270°C/−454°F) was detected, which was interpreted by most astronomers as being residual radiation from the primordial Big Bang. Accordingly, the steady-state hypothesis was abandoned by most cosmologists in favour of the Big Bang model.

Gold also carried out research on a variety of processes within the Solar System, including studies on the rotation of Mercury and of the Earth, and on the Moon. He put forward a controversial, and still not widely accepted, theory that oil and coal were not produced by fossilization of organisms but by nonliving processes at great depths.

In addition he published work on relativity theory.

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