

Derek York
1936-2007



Derek York, a pioneer of modern geochronology, died at age 70 August 9, 2007. York was a professor emeritus of physics at the University of Toronto, Canada, where he spent his entire career after receiving his Ph.D. from University College, Oxford, U.K., in 1960.

Born in Yorkshire, England, in 1937, Derek York received his early education in physics and earth science at Oxford University. During this period he became strongly interested in the use of unstable isotopes for the dating of rocks (the science of geochronology). After arriving in Toronto he quickly became a leader in the field of potassium-argon dating and was responsible for developing novel methodology in the field. One of his papers on a general method of least squares fitting of data is used now by all isotope laboratories throughout the world. During the Apollo missions to the moon, NASA appointed him to the prestigious position of Foreign Principal Investigator, in recognition of his preeminence in high resolution geochronology. He authored two books on the age of the earth; both of these have been translated into several languages.

Dr. York developed an entirely new approach to dating rocks using a continuous laser beam to fuse rocks and release the trapped gases which are subsequently analysed for their isotopic content using ultra-sensitive mass spectrometry. This had a major impact for physicists, geologists, mineralogists, and anthropologists studying the age of rocks, mineral deposits, fossil bones, meteorite impact craters, and evolution of ancient humans, to mention just a few areas. Professor York's contributions to geochronology have been characterized by his continual quest for new methods, leading him and his associates to date some of the oldest rocks on earth (and the moon) and some of the youngest.

In addition to these major contributions, he developed a break-through in linking the age of a rock or mineral grain to the temperature at which it cooled (the science of thermochronometry). This has provided major insights into the tectonic and metamorphic history of the earth. He has linked these thermochronometric methods to paleomagnetic studies. Ancient magnetic fields are "frozen" into rocks and minerals at characteristic temperatures. This novel approach linking the magnetic blocking temperature to the isotope blocking temperature has provided major insights into the intensity of the magnetic field of the very early earth, the size of its core, the nature of the mantle, and the relative motion of the constituent plates of the earth's crust. His most recent work involved anthropologists, and worked out the geochronology of early humans and thereby the rate at which hominids evolved. His work yielded precise dates circumscribing the age of the famous "Lucy" finds in Ethiopia.

In 1985 he was awarded the Past-President's Medal of the Geological Association of Canada and was elected a Fellow of the Royal Society of Canada.

*University of Toronto
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