

Tribute to Thomas J. Ahrens

Thomas J. Ahrens, one of the leading figures in mineral physics, geophysics, and planetary sciences during the Twentieth Century and a member of the Seismological Laboratory, passed away on November 24, 2010 at the age of 74. His many former students, collaborators and Caltech friends will sorely miss him. Ahrens spent more than forty years at Caltech and was the Fletcher Jones Professor of Geophysics, Emeritus when he passed away. His vast research accomplishments and impact touched on the origin, differentiation and evolution of the Earth and planets. An experimentalist at heart, he was widely known for starting and leading the Lindhurst Laboratory of Experimental Geophysics. Through the more than thirty graduate students and fifteen post docs and visiting associates he mentored, his impact on science will be felt for many years to come.

Ahrens set up his first Caltech shock wave laboratory at the Kresge Seismological Laboratory when he came to the Institute in 1967 as an Associate Professor. He made the link between the Earth's seismic structure, its composition, and its physical properties. When the Seismo Lab moved to campus in 1974, he opened a new facility in the sub basement of the South Mudd Laboratory where he and his group tackled questions that are still part of the scientific frontier to this day. Exploring the pressures and temperatures opened by the shock wave facility, he and his associates determined the first experimentally based equations of the state of the deep mantle and core and made the first experimentally based estimates of the temperature of the core.

Born in Germany, Ahrens received his BS from the Massachusetts Institute of Technology in 1957, his MS from Caltech in 1958, and his PhD from Rensselaer Polytechnic Institute in 1962. He was a geophysicist with the Pan American Petroleum Corporation from 1958 to 1959, worked as a second lieutenant for the U.S. Army in the Ballistics Research Laboratory from 1959 to 1960, and was the head of the geophysics section in the Poulter Laboratory of the Stanford Research Institute from 1962 to 1967. He joined Caltech in 1967 as an associate professor of geophysics. He became professor of geophysics in 1976 and was the W. M. Keck Foundation Professor of Earth Sciences from 1996 to 2001. In 2004, he was named the Fletcher Jones Professor of Geophysics and became Jones Professor, Emeritus, in 2005.

Ahrens published more than 375 papers, held three U.S. patents, and received numerous honors and awards for his research. He was a member of the National Academy of Sciences and the American Academy of Arts and Sciences, and was a Foreign Associate of the Russian Academy of Sciences. He won the 1995 Arthur L. Day Medal of the Geological Society of America, the 1996 Harry H. Hess Medal of the American Geophysical Union, and the 1997 Barringer Medal of the Meteoritical Society. He also had an asteroid named after him.

He is survived by his wife, Earleen; children Earl, Eric, and Dawn; and grandchildren Greta, Violet, Jacqueline, and Samuel.