

Hans E. Suess, professor emeritus of chemistry, died

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Hans E. Suess, professor emeritus of chemistry and one of the four original faculty members appointed to the University of California, San Diego, died Monday, September 20 in a La Jolla retirement home. He was 83.

Dr. Suess, a long-time resident of La Jolla, is best known for his contributions to the field of cosmochemistry. Among other things, he is credited with developing and improving the method of radiocarbon dating that is used today in a variety of scientific arenas including anthropology, archeology, geophysics and astrophysics.

He also contributed to finding answers concerning the origin and synthesis of the elements and the evolution of the solar system.

An important theoretician who proposed solutions for problems that only later could be solved experimentally, Dr. Suess' work helped lead to the development of the shell model of the atomic nucleus.

Dr. Suess' interest in cosmochemistry is a legacy of his family's scientific achievement. He was born in December 1909 in Vienna, Austria, the son of Franz E. Suess, a professor of geology at the University of Vienna. His grandfather, Edward Suess, was the well-known geologist and statesman who wrote "The Face of the Earth," an important early work in geology. Dr. Suess' family instilled in him an interest in plate tectonics and continental drift, fields that were largely theoretical at the time.

Dr. Suess earned his doctorate of chemistry at the University of Vienna in 1936, conducted research at the Swiss Technical University, and from 1937 to 1950 was a member of the University of Hamburg faculty in Germany.

From 1950 to 1955, he was a research associate at the Institute for Nuclear Studies in Chicago, where he was introduced to Enrico Fermi, Harold Urey, Willard Libby, and Joseph and Maria Mayer. While in Chicago, he worked in radiochemistry and studied the abundances of the elements. Working independently and simultaneously with Maria Mayer, Dr. Suess found an explanation for the numbers describing the periodicities in specific neutron and proton numbers, called the "magic numbers" by Maria Mayer. Hans Jensen, a German physicist, helped Suess with a completely new principle in nuclear physics, that of a spin-orbit coupling, also called the Mayer-Jensen coupling. In 1950, Mayer and Jensen shared the Nobel Prize in physics for this idea, which was based to a large extent on Suess' magic numbers.

In 1955, Dr. Suess moved to La Jolla and the Scripps Institution of Oceanography where he established the La Jolla Radiocarbon Laboratory.

Here, Dr. Suess described how the abundance of elements and their isotopes reflected nuclear and cosmic properties. Suess' paper on "Abundances of the Elements," co-authored with UCSD chemist Harold Urey, is considered one of the most influential contributions to cosmochemistry, and provided the database for theories on element synthesis.

Dr. Suess' paper with Roger Revelle in 1957 on the carbon cycle was critical in calling attention to the dangers of global warming. The accurate tree ring calibration curve for carbon 14, obtained in Dr. Suess' Mount Soledad laboratory, formed the basis for the subject of carbon 14 geophysics. His use of tree ring chronologies for the establishment of an absolute carbon 14 chronology was a breakthrough which led to major revision in "Old World" archeology.

In 1958, Dr. Suess was one of the first four professors appointed to the UCSD faculty when an undergraduate campus was created by the UC Regents.

Dr. Suess was a member of the Heidelberg Academy of Sciences, and the National Academy of Sciences, a foreign member of the Austrian Academy of Sciences, and was elected a foreign member of the Max-Planck Institute for Chemistry at Mainz, West Germany, in recognition of his research in cosmochemistry and meteorites.

Dr. Suess is survived by his wife of more than 50 years, Ruth; his daughter Beate in France; his son, Steven in Santa Cruz; and three grandchildren. A memorial service has been planned, but the date has not been set.

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