

Memorial to Robert Sinclair Dietz 1914–1995

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Robert S. Dietz used to say that when his time came to leave this Earth, he wanted to be struck by a meteorite and then become fossilized.

Dietz, one of the twentieth century's most influential geologists, died of a heart attack early Friday, May 19, 1995, at his home in Tempe, Arizona. No meteorite was involved, and the odds are stacked against his becoming a fossil. But his passing just barely missed a geologically significant date. May 18 marked the fifteenth anniversary of the eruption of Mount St. Helens.

He is survived by a companion, Yun Wong; his ex-wife Nanon Grinstead Dietz of La Jolla, California; two sons, Rex Dietz of Billings, Montana and Drew Dietz of Roslyn, Pennsylvania; three stepchildren, William Speidel of La Jolla, California, Julie Speidel of Seattle, and Marion Speidel Keen of Lopez, Washington; a brother, Lewis Dietz of Rockport, Maine; and three grandchildren, Joel, Abigail, and Derek Dietz of Roslyn, Pennsylvania.

Other survivors include a mountain in Antarctica, a tablemount on the Pacific Ocean floor, and an asteroid somewhere in orbit between Mars and Jupiter which have been named in his honor.

Dietz made pioneering research contributions to three distinct divisions of the geosciences: sea-floor spreading, the recognition of meteorite and asteroid impact structures on Earth, and the impact origin of the moon's surface. He also conceived and organized Project Nekton, the plan to dive to the deepest spot in the world, the Challenger Deep in the Pacific Ocean. He often said, "I never met a rock I didn't like."

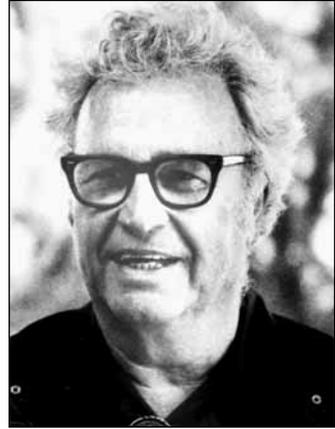
His research took him to all the continents, including Antarctica, and a mile below the ocean's surface in a deep-sea submersible. Yet Dietz took pride in having never received a government grant, although he came close twice.

He did receive private support for his impact research from the Barringer Crater Company of Philadelphia. He was the fruitful recipient of other people's grants as well, but telling him that would have gotten his hackles up.

Dietz was one of the most irritating as well as influential geologists of the 20th century. The late Walter H. Bucher was one of the many geologists whom Dietz irritated, especially on the topic of cosmic impact. But Dietz later received the Walter H. Bucher Medal of the American Geophysical Union for original contributions to plate tectonics.

Among his many other awards were the Meteoritical Society's Barringer Medal for meteorite crater research, and the Penrose Medal, the top award of the Geological Society of America.

Dietz received his bachelor's, master's, and doctoral degrees at the University of Illinois, completing his education in 1941. During World War II he served as a pilot in the U.S. Army Air Force, attaining the rank of lieutenant colonel.



From 1946 to 1963, he was a civilian scientist with the U.S. Navy. He worked out of the Navy Electronics Laboratory (NEL) in San Diego from 1946 to 1954 and again from 1959 to 1963. In his first assignment he led the oceanographic research effort on Admiral Richard E. Byrd's last Antarctic expedition, Operation Highjump, in 1946–1947.

Dietz was always looking for better ways to study the ocean floor. This led him to authorize in 1952 the purchase of the first "Aqua-lungs" imported from France by a then relatively unknown French naval officer named Jacques Cousteau. NEL researchers and colleagues from Scripps Institution of Oceanography then made the first offshore geologic map of the sea floor using scuba gear.

In 1954, Dietz discovered a chain of mountains in the mid-Pacific Ocean. Dietz, who was a Fulbright Fellow to the University of Tokyo in 1953, named them for Japanese emperors and empresses.

Dietz coined the term "sea-floor spreading," but both he and the late Harry Hess of Princeton University independently published the theory in the early 1960s. According to Dietz and Hess, lava emerges along the mid-ocean ridges from Earth's mantle to form new oceanic crust. The old material in turn plunges into deep-sea trenches. In 1967, the concept was incorporated into a more complete, revolutionary theory of plate tectonics. Dietz helped to guide the transition.

The theory describes Earth's surface as a mosaic of a dozen rock plates in relative motion. Plate tectonics soon became to geology what evolution is to biology—the central organizing concept.

Dietz also advocated meteorite and asteroid impact as an important geologic process acting on Earth and the moon when mainstream scientists scoffed at the idea. Scientists, including Walter Bucher, were even slow to accept Arizona's Meteor Crater as an isolated example of meteorite impact.

Dietz's greatest coup for impact theory came in 1964, when he suggested that a nickel-iron asteroid had crashed into the Sudbury, Canada, region nearly 2 billion years ago. The explosion of the asteroid, which was 4 miles wide, dug a crater about 40 miles in diameter and 5 miles deep.

Dietz and his colleagues identified more than 130 impact craters and older, more heavily eroded impact scars on Earth. Dietz lived long enough to see his impact theories not only accepted, but reinforced in unprecedented fashion. In July 1994 scientists actually witnessed the aftermath of the collision of Comet Shoemaker-Levy 9's chain of fragments with Jupiter.

While working with the office of Naval Research in London in the late 1950s, Dietz collaborated with Swiss engineer Jacques Piccard in developing the bathyscaph *Trieste* for ultra-deep-sea diving.

The collaboration culminated on January 23, 1960, when the *Trieste* and its two-man crew dived 7 miles to the world's nadir, the bottom of the Pacific Ocean's Challenger Deep.

Dietz had conceived and organized the voyage, a feat that has remained unduplicated. Only last year did a robotic Japanese vessel finally return to the Challenger Deep. Dietz and Piccard described the history of the *Trieste* in their book *Seven Miles Down*, published in 1961.

Dietz completed his years in government service from 1963 to 1977 at the U.S. Coast and Geodetic Survey in Washington, D.C., and the National Oceanic and Atmospheric Administration in Miami.

Lured by the Center for Meteorite Studies, Dietz became a professor of geology at Arizona State University in 1977. He retired in 1985, but continued to report to his office as professor emeritus until the day he died, mentoring students and assisting with the development of the ASU Geology Museum.

An ardent evolutionist, he devoted much of his energy in his later years to publicly speaking out against creationism and offering his solutions to pressing social issues such as overpopulation.

In early 1993 Dietz made the news when he offered a \$10,000 reward for any hard proof presented within two years that Noah's Ark had really been found, as strongly suggested by a CBS television special. The deadline passed with no serious takers.

Dietz wished to discourage memorial contributions left in his name. But if they must be made, they should go to the acquisition fund of the Arizona State University Geology Museum.

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