



## ARTHUR E. MAXWELL

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—John Sclater

Professor of Marine Geophysics, Scripps Institution of Oceanography

### *The Early Years at Scripps (1944-1955)*

Arthur Eugene Maxwell has always had an enduring love of the sea. During World War II he served as a in the U.S. Navy. After the navy, he completed a B.S. in Physics at New Mexico State University. Stanford University offered Maxwell a graduate fellowship in Physics but, while driving back to New Mexico from a trip to Stanford, an article about the Scripps Institution of Oceanography in *Life* magazine piqued his interest. Fortunately, Maxwell detoured to Scripps and spent the day with Walter Munk, one of the great geophysicists of the twentieth Century. Soon thereafter, Maxwell enrolled at Scripps as a graduate student where he was privileged to study with such legendary figures as Walter Munk, Sir Edward Bullard, John Isaacs and the respected statesman of science, Roger Revelle; in fact he was Revelle's first graduate student.



*Scientists on fantail of R/V SPENCER F. BAIRD, homeward bound from Capricorn Expedition, 1953. L to R back row: Dick Von Herzen, Roger Revelle, Willard Bascom, Ted Folsom, Alan Jones, Gustaf Arrhenius, Henri Rotschi, Robert Livingston, Russell Raitt. Seated: Dick Blumberg, Ronald Mason, Bob Dill, Art Maxwell, Winter Horton, Walter Munk, and Helen Raitt.*

Under the tutelage of Revelle and Bullard during the *Midpac Expedition (1950)*, Maxwell helped to record the first successful heat flow measurements through the seafloor. These, combined with successful recordings during the 1952 *Capricorn Expedition*, produced pioneering results in ocean geothermal measurements which contradicted the common conception that heat flow beneath the ocean should be much lower than heat flow from the continents. Revelle and Maxwell concluded

that the heat must come from the decay of small amounts of radioactive materials and that this heat was carried outward by a slow convective churning of the rocks of the Earth's mantle.

Maxwell completed his masters degree in 1952. While still working on his Ph.D., he left Scripps in 1955 to join the Office of Naval Research (ONR) to help organize the International Geophysical Year.

## *The Navy Years — 1955-1965*

Arthur Maxwell spent ten productive years with the Office of Naval Research (ONR) in Washington, D.C., where he served as Head Oceanographer and Head of the Geophysics Branch. He campaigned vigorously for ONR support of academic oceanographic research. With Gordon Lill, Feenan Jennings and others, he produced "Ten Years in Oceanography" (TENOC), a report that articulated a long-range plan for ONR to develop a strong academic program in oceanography. This achievement helped the academic community gain access to U.S. Navy research ships. Maxwell also advocated support of submersible research and was responsible for the

procurement of the *Trieste* by the Navy. His efforts encouraged the U.S. Navy to develop a deep-submersible program. He helped establish the Inter-agency Committee on Oceanography.

While at ONR Maxwell was active in the development of scientific ocean drilling through participation in the American Miscellaneous Society. It was this informal group that first proposed deep sea drilling, which eventually progressed to the Project Mohole, the Deep Sea Drilling Project, the Ocean Margin Drilling Program, and the Ocean Drilling Program. Maxwell was awarded the Navy's Meritori-

ous Civilian Service and Superior Civilian Service Awards. He also received the Distinguished Civilian Service Award from the Secretary of the Navy for his work in locating the sunken submarine *Thresher*.



## *Woods Hole Oceanographic Institution — 1965-1981*

In 1965 Arthur Maxwell joined the staff of the Woods Hole Oceanographic Institution (WHOI) as Senior Scientist and Associate Director. During the next seventeen years, he also served as Director of Research and Provost.

Maxwell was co-chief scientist, in 1968, with Richard Von Herzen, on Leg 3 of the Deep Sea Drilling Project using the drilling vessel *Glomar Chal-*

*lenger*. Leg 3 drilled a series of deep holes across the Mid Atlantic Ridge in the South Atlantic to recover data that yielded some of the first direct geologic evidence in support of sea floor spreading and plate tectonics.

While at Woods Hole, Maxwell assisted Paul Fye, the Director, in establishing a joint graduate degree program in oceanography involving both

MIT and WHOI. He also oversaw a solid growth of the scientific staff at the institution. During his tenure at WHOI, the Quissett Campus was acquired and a substantive building construction program began. Maxwell was also instrumental in arranging for the East Coast marine group of the U.S. Geological Survey to locate on the Quissett Campus.

*MIT President Howard W. Johnson (left) and WHOI Director Paul Fye sign the historic memorandum of agreement that created the MIT/WHOI Joint Program in Oceanography and Oceanographic Engineering on May 8, 1968. Witnessing the signing in the back row are H. Burr Steinbach, Jerome Wiesner, and Frank Press, the first MIT Director of the Joint Program.*

*Source: [www.whoi.edu/home/index\\_education\\_main.html](http://www.whoi.edu/home/index_education_main.html)*



## *The University of Texas at Austin Institute for Geophysics (UTIG) 1982—1994*

In January 1982, Arthur Maxwell came to The University of Texas at Austin as the first director of the newly formed Institute for Geophysics. His efforts as director over the ensuing twelve years developed the Institute into one of the leading geology and geophysical research institutions in the world.

One of Maxwell's first actions was to arrange the relocation of the Institute from Galveston to Austin—a move that led to a doubling of the research staff and a fivefold increase in graduate student involvement. Moreover, it resulted in greater interaction with other UT Austin departments and universities, both in the U.S. and around the world, and an

increase in the Institute's seismic data processing capabilities.

During Maxwell's tenure, NSF funding to the Institute increased substantially. In addition, he obtained gifts from the Palisades Geophysical Institute to establish endowments for the Ewing Worzel Graduate Student and the PGI Postdoctoral Fellowship Funds, the G. Unger Vetlesen Foundation for research support, and, with Peter Flawn, the Shell Oil Company Foundation for the creation of two endowed faculty chairs in the Geology Foundation. Paul Stoffa, UTIG's current Director, holds one of the Shell Distinguished Chairs in Geophysics. Maxwell also sup-

ported UTIG's acquisition of the first academic 3-D seismic survey and the development of two important tools—the UTIG heat flow measurement tool and the digital UTIG Ocean Bottom Seismometer.

In 1982 under Maxwell the Institute became a member of the Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES) and later hosted the JOIDES Office for two years (1990-1992). Under his leadership the Institute provided the first home for the Incorporated Research Institutions for Seismology (IRIS) Data Management Facility. IRIS is a university research consortium dedicated to exploring the Earth's interior through the collection and distribution of seismographic data. Maxwell's efforts also brought the the Support Office for Aerogeophysical Research to (SOAR) to UTIG in 1994.

Maxwell's participation in state, national, and international activities are extensive. His service and accomplishments include the following:

- Massachusetts Governor's Advisory Committee on Science and Technology
- National Sea Grant Review Panel
- Alaska Governor's Commission for Ocean

- Advancement through Science and Technology (Chair)
- U.S. National Committee on Geology
  - U.S. National Committee for the International Union of Geodesy and Geophysics (IUGG)
  - Finance Committee of IUGG
  - National Advisory Committee on Oceans and Atmosphere
  - Head of the U.S. Delegation to the Intergovernmental Oceanographic Commission
  - Chair of the JOIDES Executive Committee
  - JOI Board of Governors
  - Outer Continental Shelf/ Environmental Studies Program Committee of the National Research Council

- Sea Grant National Advisory Panel
- Academic Advisory Panel for a subcommittee of the Technology Transfer Intelligence Committee of the CIA
- Gulf of Mexico Regional Research Board
- NOAA Science Advisory Board
- President of the American Geophysical Union
- President of the Marine Technology Society

Maxwell has also served on the advisory committees and boards of many universities and institutions, including Harvard College, Department of Geological Sciences; Princeton University,

Department of Geological and Geophysical Sciences; University of Miami, Rosenstiel School of Marine and Atmospheric Studies; University of Colorado, CIRES (Cooperative Institute for Research in Environmental Sciences); New Mexico State University, Department of Physics; Palisades Geophysical Institute; Marine Biological Laboratory, Woods Hole Oceanographic Institution and the Boston Museum of Science.

Maxwell's awards include the New Mexico University's Distinguished Alumni Award and the Outstanding Centennial Alumnus Award.

On the occasion of Arthur Maxwell's retirement in 1994, John G. Sclater, Professor of Marine Geophysics at Scripps Institution of Oceanography, wrote the following:

*Arthur Maxwell represents an era of true deep-sea explorers for whom the love of the sea took them into oceanography. The group of which he was a leader totally changed the way we look at the world. Art Maxwell occupied key positions at critical times during the "institutionalization" of oceanography in the United States. He has had many great achievements in his illustrious career, one of which was building The University of Texas Institute for Geophysics into one of two or three leading marine geology and geophysics research institutions in the U.S.*

*His contributions to setting the national agenda while at SIO, ONR, WHOI, NAS/OSB, AMSOC and UTIG are numerous. He set the style of civility and intellectual partnership between grantor and grantee, bureaucrat and scientist, professor and student, researcher and technician and extended these relationships to the international community. His staff, friends and colleagues remember him most for his patience, thoughtfulness, concern and professionalism that have greatly encouraged many, both as scientists and as individuals.*

The staff and students at UTIG are immensely proud to be a part of the legacy of Arthur Eugene Maxwell.

