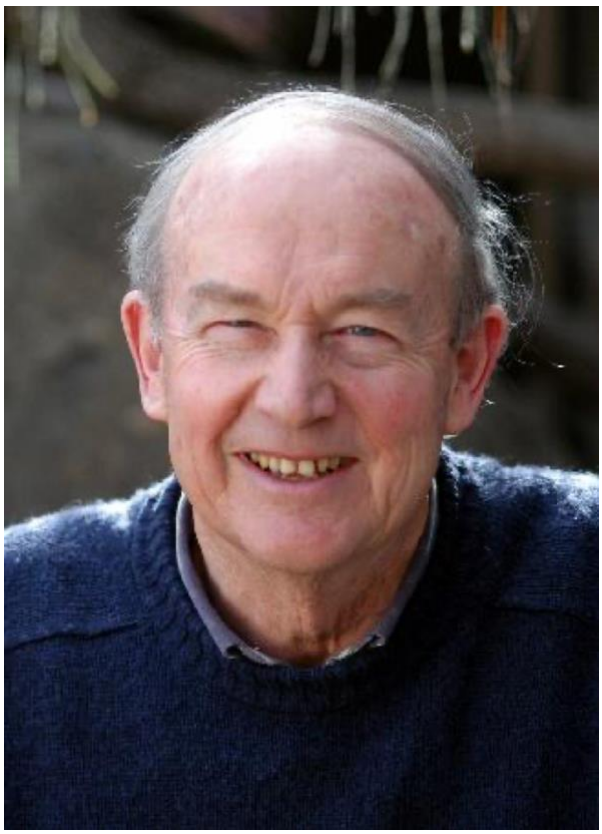
F.E.M. (“Ted”) Lilley. An initial member of ASEG.



Ted has been an active member of the ASEG since its inception. He was a foundation member of the ACT branch in 1979, and served as ACT President in 1980/81 and Vice-President in 1981/82. Between 1981 and 1983 he was Editor of the *Bulletin of the ASEG.* In many ASEG conferences he has served as a speaker, session chair or topic organiser. In 2004 he was awarded Honorary Membership of the ASEG. His affiliations with other societies include the Geological Society of Australia, the American Geophysical Union and, earlier, the Society of Exploration Geophysicists (SEG).

Ted at Research School of Earth Sciences, ANU.

Ted Lilley grew up in Hobart, and was educated at Hutchins School. Upon completing secondary studies he was awarded a cadetship in geophysics by the Australian Atomic Energy Commission. With that he studied science at the University of Sydney (1957-1960) graduating BSc(hons) in geophysics.

After experience in aeromagnetic surveying with the Bureau of Mineral Resources (now Geoscience Australia) from 1961-63, he undertook graduate study in geophysics at the University of Western Ontario, Canada, where he graduated MSc and PhD. Postdoctoral work on the dynamo theory for the cause of Earth's magnetic field followed at the University of Cambridge in England, working with Professor Sir Edward Bullard.

In 1968 he returned to Australia, to a research fellowship in the Department of Geophysics and Geochemistry of the Australian National University. Successively a Research Fellow, Fellow and Senior Fellow, he carried out research in geophysics, and retired at the end of 2003. However, he continued

in the Research School of Earth Sciences as a Visiting Fellow, and in 2019 was appointed an Honorary Associate Professor.

He has worked particularly in geomagnetism, and on measurements of natural electromagnetic induction in the Earth. These research projects have led to participation and leadership in the first magnetometer array studies in Australia and India, early magnetotelluric measurements on land and seafloor, and a variety of other measurements of natural electromagnetic induction, both terrestrial and marine. Observing new phenomena has often called for new theoretical understanding, which has been a stimulating part of the work.

Ted with a marine magnetometer on Research Vessel Franklin, 1995.

In addition to over 50 years of research he also gave classes in geophysics to the Department of Geology in the ANU Faculty of Science. This contribution involved lectures and practical classes over some 25 years (until 1994). Ted enthusiastically arranged student excursions to such venues in Canberra as the BMR/AGSO/GA Magnetic Observatory, the ANU Seismic Vault at Mt Stromlo, and the Black Mountain Tower (where students found its swaying was too much to measure gravity correctly!).

Ted has published over 130 papers from 1964 and continuing to the present with sometimes more than 5 per year. Many have been in the ASEG's Exploration Geophysics and the SEG's Geophysics. A full list is at: http://rses.anu.edu.au/~ted

Ted on the Antarctic Vessel Aurora Australis at the South Magnetic Pole, April 1997. (Note the dip needle is vertical.)

In conversation, Ted told me of the stimulation he had found in the demands which field observations, theory and numerical modelling place on each other. Ted remarked that while science should be objective and impersonal, the warmth of the human dimension experienced when one actually comes to do science is a marvellous bonus, and profoundly rich. Ted expressed his gratitude to his mentors and collaborators, and especially his students. He remarked how much he had appreciated the camaraderie of his ASEG fellow members.

For more of Ted's recollections see "Some snapshots from fifty years of geophysics" published in the Extended Abstracts of the ASEG 17th Geophysical Conference and Exhibition, Sydney 2004.