## PHIL WANNAMAKER THOUGHTS George Jiracek Professor Emeritus San Diego State University

With the shocking passing of Phil Wannamaker last week, the global electromagnetic geophysics community has lost a world-class scientist and I lost a long-time friend and collaborator. I cried when I got the news and I'm still crying in my heart.

Phil and I first met in 1978 at the University of Utah (UU) while I was spending sabbatical time with my close colleague and friend, Jerry Hohmann. Jerry introduced me to this young, deep-voiced, kid who Jerry said was the best geologist he'd ever had as a geophysics student. Soon we were all lauding Phil's amazing geophysics ability too. Within a few years there appeared the first three-dimensional modeling of geophysical electromagnetic data.

When Jerry Hohmann died unexpectantly in 1992 Phil continued to carried-on his legacy at the University of Utah not only through his science but also as Trustee and Treasurer of the Gerald W. Hohmann Memorial Trust for Teaching and Research into Electrical Methods of Geophysics.

Phil produced outstanding, ground-breaking, science during his entire life. I'll briefly mention a few instances, but they are just the tip of the iceberg of his many, many successes. His 1980s interpretations of electromagnetic measurements in the western US shed new, exciting implications of deep crustal processes and hastened geothermal energy exploration. This also set Phil's lifelong studies of deep Earth crust-mantle processes that included Oregon's Cascades, the Colorado Plateau, and the Appalachians. And, then later in Antarctica where they involved continental ice sheet stability and in New Zealand where fluids along active geological plate boundaries were skillfully gleaned from electromagnetic measurements. In fact, the international team led by Phil received the New Zealand Geophysics Price for best paper in 2009.

Phil was not only outstanding at interpreting complex data. He and John Stodt constructed their own field equipment. And, the UU three-dimensional, inverse modeling codes are widely used around the world.

It was in New Zealand that I really got to know Phil. As a colleague I knew his quiet, humble nature and his intellect. Then I found out how much fun it was to do field work with him. I've included a few pictures below that confirm this.

I know now that Phil is gone. But, when I close my eyes, I see Phil alive and in New Zealand where we're having the time of our lives. You see, I believe in the multiverse, and on one or more universes we're enjoying exactly what we did then.

George Jiracek September 2, 2022 On Our Universe



Phil outstanding in his field in Marlborough, New Zealand.



Chopper (left) and field team (right) in Southern Alps, New Zealand.



Phil directs chopper landing with assistance from Graham Hill (formerly GNS).



Equipment installation with (from the left) Stewart Bennie (GNS), Virginia Maris (UU), Peter Winther (SDSU) and Phil.



Phil and George passing time doing New Zealand Maori warrior poses. George thought that meant "rah rah".