Carl Witz Gartlein

November 13, 1902 — December 20, 1965

It would have been fitting had the northern sky been aglow over Connersville, Indiana, on November 13, 1902, when Carl Witz Gartlein was born. For the boy who humbly watched and pondered the soft and undulating northern lights over his native Indiana was to become one of the outstanding authorities on the aurora borealis.

But his active interests were far broader than auroral research. He was a warm and generous colleague in any endeavor. He loved ideas, and he loved to help make things work. His interests included whatever anyone around him was doing or wanted to do. Especially it may be said fondly that the work of hundreds of graduate physics students in Rockefeller Hall, from the late 1920's to the mid-1950's, would have been less effective and far less fun were it not for the calm, cheerful, companionable assistance freely given at any time by Carl Gartlein.

After graduation from DePauw University in 1924 he came to Cornell and in 1929 was awarded the Ph.D. degree. He then joined the Cornell physics faculty where he remained, refusing many enticements to greener pastures, until his death at age 63.

His doctoral thesis was a study of the arc spectrum of germanium (i.e., optics, light, and spectroscopy) and rather well encompassed the dominant area of experimental physics research at Cornell at that time. However, to this extensive expertise he quickly added a broad pioneering knowledge of electronics and its application to Cornell research both within and beyond the bounds of Rockefeller Hall. But more, he was fascinated with, and made it a point to be knowledgeable about, all sorts of new and expanding techniques in experimental research in general—note the variety of official titles he held: Instructor, Curator, Superintendent of Technical Service Personnel, and Technical Advisor for Research and Facilities, all before his final title of Associate Research Professor of Physics and Director of the World Data Center A for Visual Aurora.

Highlights of his auroral research: In the middle 1930's he organized the first systematic observations of aurora, using the volunteer help of dedicated amateurs (including airline pilots who observed the upper sky when the lower sky was overcast). In 1939 he designed, built, and put into operation the world's fastest auroral spectrograph. This instrument, installed in the upper reaches of his spacious barn at his farm home north of the Cornell campus, was enthusiastically manned at all hours of the night by himself, his wife Helen, and later by his son Christopher.

Gartlein's barn, away from the sky-scattered light of the City of Ithaca, was to become an internationally famous auroral observatory. To the fast spectrograph was soon added another innovation, the all-sky camera, for continuous photography of the aurora. About this time he also set up and coordinated the simultaneous observations from several strategically located stations in New York and Canada; with the spectrographic triangulation measurements that this network of simultaneous observations provided, he carried out the breakthrough-proof that hydrogen atoms do enter the earth's atmosphere during an auroral display. When the International Geophysical Year was proposed for 1957, his pre-eminence in auroral work led to the establishment at Cornell of the World Data Center A for Visual Aurora. Finally, in his last five years, he developed a television pickup camera for studies of extremely faint auroral displays, a device that significantly extended the power of his arsenal of auroral instruments-

For about ten years he operated at Cornell a training program for observers throughout the world in the use and maintenance of the fast spectrograph, the all-sky camera, and then the television camera extension. Responsibilities as trainer and as the Director of the Center for systemization and codification of World-wide observations were his main activities at the time of his death.

He was a member of the Phi Beta Kappa and Sigma Xi honorary societies, and of these technical societies: the American Physical Society, the Optical Society of America, the American Geophysical Union, and the American Association of Variable Star Observers. He served on numerous national and international committees: the Optical Standards Committee of the National Bureau of Standards, the subcommittee on the Upper Atmosphere of the National Advisory Committee for Aeronautics, the Aurora and Airglow subcommittee of the U.S. National Committee for the IGY, the Auroral Atlas subcommittee of the International Association of Geomagnetism and Aeronomy, the Aurora and Airglow Advisory Committee to the Arctic Institute of North America, the Aurora Committee of IAGA, and the Upper Atmosphere subcommittee of the Committee on Polar Research of the National Academy of Sciences. And he was the Auroral Reporter for the U.S.A. for the International Quiet Sun Year. As expected, he traveled extensively in pursuit of his investigations and in his committee representations; he is as well known in New Zealand, Russia, Alaska, Antarctica, and Norway as he is in New York State and Washington, D.C. He wrote numerous technical papers and received numerous honors, including an honorary D.Sc. degree in 1965 from Colgate University where one of his network auroral stations is located.

This account, preponderantly concerned with his professional life, would be amiss were it not to include mention of at least three of his other life-long interests: his church—he was senior warden in St. John's Episcopal Church in

Ithaca; the public schools—he was a member of the South Lansing School Board; and fishing—he knew intimately how best to live with the local lakes and streams.

Brief mention was made above of his wife, the former Helen Hart, who is on the staff of the Cornell Auroral Data Center, and of his son, Christopher C, who continues to live at the farm home and to help operate the auroral observatory. He is also survived by two daughters, Mrs. Geoffrey (Caroline) Cook of Thornhill, Ontario, and Mrs. Jonathan (Delight) Bosworth of Marlboro, New Hampshire, and by six grandchildren.

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