

CARL SAGAN (1934–1996)



Carl Sagan.

Carl Sagan passed away on December 20, 1996 at the age of 62. He was, at the time of his death, the David Duncan Professor of Astronomy and Space Sciences and director of the Laboratory for Planetary Studies at Cornell University, and president of the Planetary Society. He had previously been editor of the journal *Icarus*, chairman of the Division of Planetary Sciences of the American Astronomical Society, and had served on the editorial board of *Origins of Life and Evolution of the Biosphere*. He was author or co-author of more than 400 scientific papers over a career that began at the University of Chicago, where he earned A.B., S.B., S.M. and Ph.D. degrees, and continued at the Harvard-Smithsonian Observatory and then at Cornell. He was a recipient of the National Academy of Sciences Public Welfare Medal, the NASA Distinguished Public Service Medal, and the Pulitzer Prize.

Carl and his colleagues made significant scientific contributions in several areas of exobiology and planetary science. His work included models of the greenhouse

effect on Venus, explorations of the chemistry and spectra of minerals thought to be present on the surface of Mars, and experiments designed to simulate the organic chemistry of the atmospheres of the outer planets. Together with the late W. Reid Thompson, he used a combination of laboratory data and spectral analysis to construct the most accurate model yet of the atmospheric organic aerosols of Titan. His group also examined the possibilities for organic chemistry on comets and asteroids, and for the impact delivery of that organic material to the early Earth. He participated in several planetary missions, including the Mariner, Viking, and Voyager programs, and was an interdisciplinary scientist on the Galileo project at the time of his death. He also served as mentor to numerous graduate and undergraduate students, postdoctoral researchers, and visiting scientists.

Carl was without doubt one of the most widely known scientists in history, among not only his peers but the entire population of planet Earth. His series *Cosmos* was one of the most watched programs in the history of television. He had a rare combination of abilities which allowed him to contribute to the pursuit of scientific knowledge, and then to translate that knowledge and communicate it to the public. All of us who are interested in the origin and evolution of life, on Earth and elsewhere in the universe, should be grateful that Carl shared our passion for this most fundamental of questions. Government funding for origin of life research could have become an easy political target, as did the Search for Extraterrestrial Intelligence (another of Carl's passionate interests). Carl and the others who have fed the public hunger for knowledge of the origins of our universe and our species share at least some of the credit for the fact that our field has not suffered this fate. In this era of increasing mysticism and pseudoscience, it is all the more remarkable that Carl was able to feed this hunger, not with intellectual junk food, but with sound and accurate material that was also easy for the layperson to digest. The most fitting way for us to honor his memory is to carry on the work of bringing the results of our research to the public, in an intelligible and interesting form.

My association with Carl and his research group began in 1990. As a newly-minted chemistry Ph.D., with a consuming interest in exobiology but without knowledge or experience in the field, I was very fortunate that Carl was sufficiently open-minded and committed to interdisciplinary science to offer me a place in his laboratory. From him I learned not only about planetary science and exobiology, but also much about critical thinking, concise writing, and maintaining the highest standards of scientific research and scholarship. I am a better scientist for having known Carl Sagan, and the field of exobiology is richer for his having been a part of it.

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