

IN MEMORIAM: W. REID THOMPSON (1952–1996)

W. Reid Thompson was a gentle, kind, and brilliant planetary scientist who lost a heroic, courageous, and innovative fight against a devastating form of cancer. Thompson, a native of Mackville, Kentucky, arrived at Cornell with a B.S. with high distinction from the University of Kentucky, and an advanced chemistry Graduate Record Exam score in the 99.99th percentile—probably first in the nation. After receiving his M.S. in biophysical chemistry in 1975, he transferred to astronomy and space sciences upon discovering that there was a burgeoning field of organic chemistry in the outer Solar System. He took a very wide range of graduate courses—in geology, ecology, chemistry and biochemistry, physics, and astronomy—and emerged in 1984 with his Ph.D. His thesis topic was on the atmosphere of Titan. Thompson was noted for a unique combination of skills—in theoretical and laboratory organic chemistry, in light-scattering theory on modern computers (he was, for many years, a consultant to Cornell Computer Services), and in the design and analysis of spacecraft imaging sequences. He was associated with the Laboratory for Planetary Studies at Cornell for his entire career.

Some of the research projects in which he played a leading role include: (1) Determination of the radiation sources as a function of altitude in the atmosphere of Titan, and the demonstration that the saturnian electron magnetospheric flux is probably sufficient by itself to explain the production rate of the Titan haze; (2) A quantitative determination of the production of gas-phase organics in submillibar simulated Titan atmosphere experiments, and the demonstration through simple eddy diffusion theory that the abundances so produced matched the observations of Titan better than absolute reaction rate kinetics; (3) A calculation of the cometary impact rate on Titan integrated over geological time showing that about half the Titan surface should have experienced transitory liquid water for a total of a few hundred years; and (4) Imaging of the Earth with the Galileo cameras during the 1990 and 1992 flybys. His sequence of four pictures of the rotating Earth, his close-ups of Antarctica and Australia, and his false-color images at the boundary of the red and infrared (showing the widespread abundance of chlorophyll on Earth) became famous. They appeared on the covers of *Nature* and many other journals. Reid was an associate imaging team member for the Voyager Uranus and Neptune flybys and for Galileo.

He was an inspiring mentor to undergraduate and graduate students, and was awarded Cornell's DuPont Teaching Prize as well as its Clark Award for Distinguished Teaching. He was also cited as Distinguished Reviewer by *Icarus* and served as Associate Editor of the *Journal of Geophysical Research—Planets*. He was in almost all scientific matters rigorous and thorough. The only area of disagreement I ever had with him was on UFOs, he—characteristically—being more forgiving than I. A product of small-town rural America, Thompson delighted in the culture of upstate New York, away from such large metropolises as Ithaca.

Since his graduate school days, he dreamed of using Galileo data to determine the chromophores in the jovian clouds (or at least to exclude some of the major candidates), one of the outstanding mysteries of planetary science. Tragically, he died just after Galileo achieved orbit around Jupiter.

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Reid Thompson in a typical pose. Photograph by Denise Weldon.