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One Man's Universe

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CARL SAGAN

A Life in the Cosmos

By William Poundstone

Henry Holt. 473 pp. \$ 30

Reviewed by Marcia Bartusiak

Carl Sagan was one of the lucky ones. By the age of 10 he knew what he wanted to do with his life, and he flourished in achieving it. At a family gathering, his grandfather asked young Carl what he wanted to be when he grew up. The boy confidently replied, "An astronomer." "Yes," answered his grandfather, "but how will you make a living?" That, it turned out, was no problem at all.

It was not stars and galaxies, though, that captured Sagan's imagination as a youth. It was always the possibility of life "out there." He gained riches and fame in his passion for exobiology, a word he did not coin but a field that he dominated for many years as he participated in the key planetary explorations in the last decades of this century.

In this biography, author William Poundstone cuts through the celebrity hype and reveals a scientist who was all too human. Sagan is portrayed as a man of contradictions. Some who knew him compared him to Dr. Jekyll and Mr. Hyde. He was passionate in his work and creatively imaginative in his scientific hypotheses, from possible life forms on other planets and communication with extraterrestrials to the potential threat of nuclear winter. He was charming, witty and poetic. Yet he could also be egotistical, self-absorbed, insecure and cruelly indifferent at times to his first two wives and their children. He stole a friend's fiancée to be his third wife (a marriage, by all accounts, that was a storybook romance for 15 years, until his death in 1996). Sagan, we are told, smoked marijuana regularly, convinced it enhanced his scientific insight.

Born in Brooklyn in 1934, Sagan was his mother's favorite child, an influence, says Poundstone, that perhaps nourished Sagan's love for the spotlight. Gifted in school and skipping grades, he entered the University of Chicago at 16. Savvy in his networking, over time he landed three Nobel laureates as his mentors: geneticists Hermann Muller and Joshua Lederberg and chemist Harold Urey. They were confederates in a conjecture then largely ignored, even maligned, by others: the possibility of life beyond Earth.

Sagan didn't lose time in getting noticed. His doctoral thesis in 1960 made a big splash. At that time, the planet Venus was still viewed as a possible tropical paradise, hotter than but similar to Earth. Sagan suggested quite a different image: Venus as a scorched planet, the victim of a runaway greenhouse effect. When the first planetary probes passed by, he was proven right.

While still in his twenties, Sagan forged important connections with NASA, just when the space agency was planning its greatest unmanned voyages through the solar system. The first Mariner flight to Venus, the Viking landings on Mars, the special Voyager journeys past the outer planets and their moons -- Sagan participated in them all. Journalists quickly learned his ease with a colorful sound bite and sought him out. But this engendered jealousy in some of his colleagues. Moreover, Sagan's obsession for seeking signs of life -- any sign -- during the missions often frustrated the geologists. The envy only increased when Sagan started to grow rich from his popular books and media projects, such as the wildly successful "Cosmos" television series and the movie "Contact."

That Sagan was a good science communicator is without question. It was a natural talent. But was Sagan a good scientist? Poundstone shows that the answer depends on whom you ask. Sagan was prone to speculate and to play devil's advocate with those who insisted that no other life could possibly exist in our solar system. "He and Lederberg," writes the author, "imagined a bestiary of possible Martian macrobes. Crystophages (ice eaters) might tap the permafrost for water. Petrophages would derive water from a diet of rocks, after the model of desert kangaroo rats. . ." Within the great atmosphere of Jupiter, Sagan pictured balloon-like creatures floating from level to level and consuming organic matter much like the plankton-eating whales in Earth's oceans. These imaginings didn't sit well with more conservative scientists, an attitude that kept Sagan out of the prestigious National Academy of Sciences. Yet when he failed to get tenure at Harvard, many of his students and assistants followed him to Cornell, where he established the Laboratory for Planetary Studies. His greatest legacy may well be the entire generation of world-class planetary scientists that he inspired and trained there.

Poundstone crafts these stories well but has patched them together in a quiltlike, episodic fashion. Missing is a sustained narrative thread that allows us to understand how Sagan's varied experiences -- as media superstar, father, husband and scientist -- affected him on a deeper level. Largely basing his work on interviews and Sagan's own published writings on his life, Poundstone dutifully covers Sagan's activities. But the inner Sagan remains elusive, out of our reach. When and if a bit of life is found elsewhere in our solar system in the coming century, will Sagan be recalled as a founding father of the effort? Or will he be merely a video figure from the past remembered for "billions and billions," a phrase he claims he never said? Poundstone offers no guidance.

Marcia Bartusiak is the author of "Thursday's Universe" and "Through a Universe Darkly." She is working on "Einstein's Unfinished Symphony," which will be published next year.

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