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David G. Koch (1945–2012)

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David G. Koch died after a long battle with ALS on September 12, 2012, at his home in Elm Grove, Wisconsin. He was 67.

Dave is survived by his wife Diane, three children, and two sisters. He was always physically active and enjoyed biking, skiing, and hiking. He could often be seen walking the perimeter of NASA Ames after lunch. He also enjoyed traveling; after attending science meetings he would often spend several days exploring the surroundings. Religion was an important part of his life. He read the Bible during lunch breaks and taught religion at the Congregational Church.

Dave was born and raised in Milwaukee, Wisconsin. His father was a research chemist with the University of Wisconsin at Milwaukee. Koch attended Milwaukee Lutheran High School where he built a Michelson interferometer that proved to be a stepping-stone for his interest in physics.

Dave graduated from the University of Wisconsin-Madison, where he earned a Bachelor of Science in applied mathematics and engineering physics in 1967. At Cornell University, Koch earned a master's degree in 1971, and a doctorate in 1972, both in physics.

His career began at American Science and Engineering Inc. in Cambridge, Massachusetts, where he worked in X-ray astronomy from 1972 to 1977. He was project scientist for the Uhuru X-ray satellite in NASA's Explorer Program, doing data analysis and producing X-ray catalogs. Later, he served as the project scientist for the development of the Einstein Observatory, the first X-ray telescope satellite and a predecessor to Chandra.

Dave joined the Smithsonian Astrophysical Observatory in Cambridge in 1977, as project scientist for the Spacelab-2 infrared telescope. While there, he served as a co-investigator on the Space Infrared Telescope Facility (SIRTF) — Infrared Array Camera (IRAC) camera proposal, and co-investigator on the small explorer Submillimeter Wave Astronomy Satellite, which launched in December 1998.

In 1988, Dave came to Ames to lead the mission operations for SIRTF and the Stratospheric Observatory for Infrared Astronomy (SOFIA). He was the last project scientist for the Kuiper Airborne Observatory (KAO; a Convair-141 with a 1 m telescope), and in 1992 he created the Flight Opportunities for Science Teacher EnRichment (FOSTER) project; the Education and Public Outreach program for the KAO.

In 1992, he joined me to propose the FRESIP Mission, which later became the Kepler mission for which he served as deputy principal investigator until retiring in August 2011. Prior to the acceptance of the Mission, Dave and I would go to NASA HQ to advocate the concept. If we saw anyone in the halls, we stopped him or her and pitched the Kepler Mission whether they wanted to hear it or not. The news of our arrival would quickly spread; The Keplers are here: hide!

In 1992 Wes Huntress at NASA HQ was successful in instituting the Discovery class of space missions. These missions were modest in price yet had the capability of launching a substantial payload into heliocentric orbit. Dave and I chose a science and management team, and a contractor for development. The Mission was proposed and rejected in 1992, 1994, 1996, and 1998. Dave didn't give up nor get discouraged. Together we studied the review panel findings and decided what changes were required to make the next proposal a success.

Dave's contributions were many but most notably, he led the Kepler Technology Demonstration that we used to prove that the transit photometry method would have sufficient photometric precision to detect Earth-size planets when operating with on-orbit noise conditions. When no one else could find a method to reliably impose the extremely small light variations that are required to prove that transits by Earth-size planets could be detected, he devised a method that allowed a subset of the simulated stars to dim the correct amount for the expected duration of transits. Basically, he strung wires across a portion of some of the apertures and then slightly expanded the wires by running a small current through them. It was a critical breakthrough in our proof that the transit method would accomplish the Mission goals.

Dave was passionate about engaging young hearts and minds with the excitement of science and space exploration. He was particularly fond of educating and empowering teachers with the right tools to connect with the formal and informal classroom. In working with the teachers in 1992, he taught them how to use the web so that they could communicate with the scientists they would accompany of the flights of the Kuiper Airborne Observatory.

Dave was a patient, intelligent man, who enjoyed a good cartoon or Internet joke, and believed and lauded the importance of Kepler's space exploration. His favorite cartoon portrayed the objective of his work:

Cartoon by H. Martin; © 1991, The New Yorker Magazine, Inc.

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