

R. Kent Honeycutt

Great scientists enhance our understanding of the world by working cleverly with the stuff of the world to coax out new knowledge. Kent Honeycutt, John W. Hill Professor of Astronomy, is one of those scientists – an instrument-building astronomer of the “old” school, in the best possible sense. Like the first and probably greatest modern astronomer, Galileo Galilei, Kent designs and constructs his own innovative observing tools, including telescopes and detectors, which enable him to make discoveries about the universe from new perspectives through new modes of observing. I use the present tense here, because retirement will only give Kent more time for what he loves to do most. As a builder of things, he will always find more to build.

Kent began his career at Indiana University in 1968 as an assistant professor, fresh from earning his doctoral degree at Case Western Reserve University. In the sterling tradition of his predecessors, Professors Emeriti Frank K. Edmondson and Hollis R. Johnson, Kent has set a high standard for citizenship, with two hard stints as department chair (1982–86 and 1997–2002) and endless other service contributions. As a ground-based observer who believes deeply in the value of hands-on training, Kent has taken the lead over the decades to ensure that students and faculty at Indiana University have access to a broad complement of local and remote telescopic facilities for teaching and research. He has been director of Goethe Link Observatory for more than 20 years, an oftentimes insufficiently appreciated task that has demanded enormous time and effort.

In the late '80s, realizing that the Department of Astronomy needed a state-of-the-art facility in a good site to remain a scientifically competitive program, Kent started wheeling and dealing quietly on the national scene. He discovered that the National Optical Astronomy Observatories (NOAO) wanted to partner with universities to construct a telescope around a modern 3.5-meter spun-cast mirror. Thus began the conception and difficult birth of the WIYN (Wisconsin-Indiana-Yale-NOAO) Telescope Consortium, in which Kent played the lead role for IU; and, even though he recently left the board of directors, he remains involved as a technical advisor for WIYN instrumentation. Throughout the long, complex effort to negotiate the WIYN agreement and identify IU's share of the funding, Kent's patient, unruffled technical and political acumen were critical to IU and WIYN's success. WIYN's 3.5-meter telescope is probably the world's best in its size class, and Kent was one of a handful of key individuals who made it possible.

Throughout his career Kent has designed and built astronomical instruments, including CCD imagers, spectrographs, and entire telescopes. In this modern age it is not just the hardware that matters, but the software used to operate equipment at its maximum efficiency to make once impractical observations routine. Kent has been a master of both. Among Kent's many innovations two are most notable. Kent was a pioneer in time-resolved spectrophotometry and in robotic observing. His Roboscope at the Morgan Monroe Station of Link Observatory has been doing year-round unattended photometric observations for nearly 15 years. This observatory senses the weather, opens and closes itself, works through a programmed list of objects for long-term monitoring, reduces the data, combines it with an archive, and sends its results to Kent's office computer, all automatically. It even telephones Kent or IU staff if it encounters a problem. Kent is currently completing SpectaBot, a larger and more sophisticated robotic telescopic for spectroscopic monitoring.

Revolutions in astronomy come about largely through observing the universe in new ways. There is much in the news about what we learn by opening previously unexplored parts of the electromagnetic spectrum or by improving spatial resolution. Kent has led the less heralded but equally important reconnaissance of the time domain – comprehensive study of the variability of objects in the universe on both short and long time scales. Most of his research has concerned the complexities of interacting close binary stars, where mass flowing between the stars causes a rich array of intricate time-dependent phenomena, but he has also worked on everything from comets and planetary rings to quasars and gamma ray bursts, including the discovery of a Kuiper Belt Object that briefly held a size record. One might expect someone close to retirement to slow his pace of research, but Kent's productivity is now at a career high.

A tribute to Kent would not be complete without mentioning his dedication as a teacher. He approaches every teaching role with the same hardworking zeal and devotes large amounts of time to one-on-one mentoring. It is common even now to see him in the conference room with his doctoral student Stella Kafka discussing plots that are scattered across the large table. Many students have apprenticed with him, and he has produced a substantial fraction of our Ph.D.s over the years. Kent's observational techniques classes have been the high point for the academic careers of many of our majors at all levels, because of his fierce dedication, even in the face of cranky equipment and Indiana weather.

Fortunately, the department is not really losing Kent. He is planning to assist with observatory oversight and maintenance while continuing active research efforts for at least one or two more years. However, I will miss the special moments that are now unlikely to occur, like Kent emerging from his lab with his head in the middle of some strange device designed to demonstrate a difficult concept to his introductory astronomy classes, or Kent weaving down the hallway like a banking airplane chanting "careening out of control." Well, Kent, I hope now you can truly let go of your overload and careen no more. You have been an unselfish leader and a stalwart colleague who has done more to advance the fundamental interests of the department and the discipline than most of the rest of us combined.

Richard H. Durisen