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Edwin Din Loh (1948–2019)

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Edwin D. Loh died on Friday the 7th of June, 2019.

Courtesy Joyce Parker

Edwin Loh was born in Suzhou, China in 1948, then emigrated to the United States before he was one year old. He grew up in Blacksburg, Virginia, with a sister and three brothers. Ed Loh attended Caltech. He then earned his Ph.D. from Princeton University in 1977, where he was involved in the construction of an early CCD system with his advisor David Wilkinson. It was at Princeton where he met his wife Joyce Parker at a cooking club. He was a professor at Michigan State University for 31 years, where he took a deep interest in undergraduate education and teacher training.

W. A. Baum proposed the concept of photometric redshifts at an IAU Symposium in 1962 [1], particularly for elliptical galaxies in clusters of galaxies. Workers like Bev Oke and Allan Sandage carried it further, using photographic plates to obtain B-V colors and comparing the estimated redshift with spectroscopic redshifts [2][3][4][5]. [Note: Koo used more filters, but was still using photographic plates in his work.] But Ed Loh, together with E. J. Spillar, realized that the photometric accuracy made available through CCD imaging (compared to photography), combined with "template" spectra for typical spectral shapes of objects expected in the survey, enabled the employment of photometric redshifts at an industrial scale. They proposed a system of 6 filters to obtain thousands of redshifts of galaxies as faint as magnitude ~22 [6]. This technique is mentioned by about 600–800 peer-reviewed astronomy papers per year.

Ed Loh was the Principal Investigator for Michigan State's Spartan Infrared Camera, a high-resolution infrared camera for the SOAR Telescope in Chile [7]. His astronomical research over the last 10 years at Michigan State focused on using the SOAR Telescope and other observatories to study dense gaseous knots inside the Crab Nebula. With his close collaborators Jack Baldwin and Gary Ferland, Loh used the Spartan camera to discover molecular hydrogen in small knots found in the cores of many of the Crab Nebula filaments. These cores are cooler than the regions that emit the well-studied optical lines. Using the spectral simulation code Cloudy, they found that in this unusual environment the hydrogen

molecules form by combining neutral hydrogen and H^-, rather than by combining neutral hydrogen on dust grains. This process is thought to be the formation process for molecular hydrogen in the early universe.

Ed Loh's wife, Joyce Parker, is the daughter of Dr. Eugene Parker (1927–), a celebrated solar plasma physicist, who had been an undergraduate student at Michigan State University, the university that was Ed Loh's home for the last 31 years. He was a quiet and steady presence in the MSU astronomy group, and he will be very much missed.

Citations

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