

Charles S. Morris (1952-2025)

Charles S. Morris, a well-known comet observer and analyst by hobby and professional meteorologist by trade, died suddenly of an apparent heart attack in mid-January 2025 at age 72 in his long-time home at Fillmore, California. He had been preparing to undergo a heart procedure at a nearby hospital and had had a history of heart problems.

Born in Detroit, Michigan, he became interested in astronomical observing in the 1960s. Charles made 2327 visual observations of variable stars between September 1967 and October 1983 that are in the American Association of Variable Star Observers archive. After seeing comet C/1969 Y1 (Bennett) in 1970, Charles' interest in astronomy focused on the visual observation of comets -- in particular, comet photometry, or the brightness of comets. He once wrote that, "unlike asteroids, comets both reflect the sun's light and also give off their own light; thus, a comet's brightness can be difficult to predict and is fascinating to study".

Morris obtained a BS degree in astrophysics at Michigan State University and an MS degree in atmospheric science at Purdue University. He once wrote: "At night, if you can't see the stars, you are probably looking at clouds! Hence, the career choice in meteorology." In the early 1970s, Charles had an undergraduate research grant for examining the effect of instrumentation upon visual comet-magnitude estimates, and he remained interested in the so-called aperture effect (size of mirror or lens) in observing the brightness of comets, in which comets appear brighter in smaller instruments. For a while in the 1970s, he was active in publishing articles on cometary brightness in *\*The Strolling Astronomer\** of the Association of Lunar and Planetary Observers. Charles also developed the so-called "Morris" or "Modified Out-Out" method (also developed at the same time in the 1970s by Stephen J. O'Meara) in defocusing stars to compare with the brightness of comets with their extended comae.

After a number of years as an air-pollution meteorologist in the Boston area (Massachusetts), Charles moved to southern California to accept a job at the NASA's Jet Propulsion Laboratory (JPL) in 1984. There he worked for 22 years on instruments onboard earth-orbiting satellites, including TOPEX/Poseidon (launched in 1992), which measures sea level; NSCAT (launched in 1996), which measured winds over the ocean; and the Shuttle Radar Topography Mission (SRTM), which flew on the shuttle in February 2000.

Charles enjoyed talking about his tornado chasing while a graduate student at Purdue in northwest Indiana. Joe Marcus writes regarding Charles' co-authored 1975 paper in *\*Monthly Weather Review\** (103, 318): This was the first paper that documented the multiple-vortex structures in powerful tornadoes -- small but extremely strong suction subvortices that rotate around the tornado's center and do the most damage, accounting for why some houses in a tornado path are spared damage while others directly adjacent are totally destroyed. This phenomenon is widely recognized today by meteorologists but

it was novel the time, as the authors stated in their abstract: "A motion picture study provided the first conclusive documentation of multiple (suction) vortices occurring within a parent vortex system, with as many as four suction vortices that showed a behavior similar to laboratory vortices studies by Ward (1972)." This phenomenon has since garnered much popular attention: e.g., a number of years ago, the St. Louis Science Center had a model exhibit that reproduced these multiple vortices.

While in the Boston area in 1978, Charles joined Daniel Green in launching the \*International Comet Quarterly\* journal (the world's premier journal devoted solely to the observation and study of comets) with the hearty support of Brian Marsden at the Smithsonian Astrophysical Observatory; Charles remained active as the ICQ's Associate Editor for nearly a half-century until his death. He was also active with three of the ICQ's side ventures – the International Workshops on Cometary Astronomy (of which Charles attended four in the USA and three in Europe); the "ICQ Comet Observations" group forum on Facebook since 2020; and more recently the ICQ's "Comets and Their Cousins" YouTube video channel (where videos over the last few years can still be viewed with Charles taking active part in discussions). Charles also traveled with Alan Hale to Iran in July 2000 to give a talk at an international comet conference at Esfahan.

In 1985, he (and Steve Edberg) became the first people to see Halley's comet with the naked eye since 1910. From a scientific perspective, the return of comet 1P/Halley to perihelion in 1986 was very important. Charles observed Halley's comet on over 180 nights over a two-year period – including observations from three continents and four airplanes. He remarked: "There was a lot of lost sleep and an extra 10,000 miles put on my car!" He also ran the Real-Time Observation Network, made up of visual observers around the world, for the International Halley Watch, which helped keep the professional community up-to-date on the brightness of comet 1P/Halley. Both during and after the apparition, Charles analyzed 1P/Halley's light curve, its brightness as a function of time, and wrote several papers on the subject. Over the years, he analyzed the light curves of many comets, including several that have been the target of various spacecraft.

In June 1984, Charles visually recovered comet 4P/Faye (cf. IAUC 3956), perhaps the last-ever visual recovery of a short-period comet. He also helped the Central Bureau for Astronomical Telegrams in visually confirming some newly discovered comets. At JPL, Morris maintained his well-known [Comet Observation Home Page](#) webpage containing visual magnitude estimates of comets, mainly in the 1990s. Charles himself apparently made measurements of more than 400 comets in his lifetime.

While observing the amazing naked-eye comet C/1996 B2 (Hyakutake), Charles met another avid amateur astronomer, Carmelita Miranda. The two became a couple, got married, and started a local award-winning photography business (KSSP Photographic Studios) together in their hometown of Fillmore, California; their starry romance was written up in an article in the Los Angeles Times (dated 2003 Feb. 23). They also worked together on using a portable planetarium to educate tens of thousands of children via the

Discovery Center for Science and Technology in Ventura, CA. Upon her death from cancer in 2014, Charles stopped the photography business and reverted to focusing on his comet interests. He also served as a substitute teacher in local Ventura County schools during the last decade of his life.

Charles became an avid CCD imager of comets in the last decade of his life, using his backyard 41-cm reflector, while working to produce the best photometry possible from those digital images. He was especially interested in correlating total visual magnitude estimates of comets with total magnitudes derived from digital imaging.

Charles authored or co-authored more than 70 scientific papers including papers published in the *Astrophysical Journal*, *Astronomical Journal*, and *Publications of the Society of the Pacific* and the professional conference proceedings *\*The Study of Comets\** (1976) and *\*Comets\** (1981). He also wrote for the popular magazines *\*Astronomy\** and *\*Sky and Telescope\**. Although most of his scientific work focused on comets, Charles also authored papers on fast rotating stars, tornadoes (as noted above), and remote sensing from space.

Charles was a member of the International Astronomical Union, the American Astronomical Society, and the American Geophysical Union.

In 1988, Charles received the Western Amateur Astronomers' Barnard Award for his comet observing. In addition, minor planet (3783) was named "Morris" in honor of his comet observing and research.

--- The above text was written in the weeks after Charles' death by Daniel W. E. Green, and includes some text written by Charles S. Morris from his observatory website in edited form. Helpful input came from Elizabeth O. Waagen, Joseph N. Marcus, and Alan Hale.