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Photo courtesy Lowell Observatory Archives

Giclas, Henry Lee

Born Flagstaff, Arizona, USA, 9 December 1910
Died Flagstaff, Arizona, USA, 2 April 2007

Henry Lee Giclas, who lived nearly all of his 96 years in Flagstaff and spent his entire career at the Lowell Observatory, is best known for a lengthy survey of proper motions of stars and the discovery of a number of asteroids and comets.

Giclas was the only child of Eli Giclas, a son of French immigrants (original spelling Gicquelais) and Hedwig Leissling Giclas, an immigrant from Berlin, Germany. Eli Giclas was an engineer who came to Flagstaff in about 1907 to establish a system to provide water for the Santa Fe Railroad. He later worked for the local lumber company and became the first water superintendent for the city. He helped in the installation of the 42-inch reflecting telescope at the Lowell Observatory in 1909–1910.

Young Henry grew up around the Observatory, which is on Mars Hill overlooking Flagstaff. He played on its grounds and used its darkrooms and library as a high school friend of Director Vesto Melvin ("V.M.") Slipher's son, David. After high school he studied one year in Flagstaff at what is now Northern Arizona University and then transferred to the University of Southern

California to study engineering. While in the Los Angeles area he attended public lectures by Albert Einstein, Albert Michelson, George Ellery Hale, and other prominent scientists at the California Institute of Technology. Giclas returned to Flagstaff in the summer of 1930, shortly after the discovery of Pluto, and helped out as a volunteer at Lowell. The following year he left USC after becoming ill and returned to Flagstaff again. He was hired as a "general assistant" at the Lowell Observatory in September 1931 at a salary of $70 per month plus a room on Mars Hill.

As an assistant, Giclas was a jack of all trades, helping out with such tasks as experimenting with dyes for Slipher, mending equipment, and taking photographic plates, including objective prism spectra, for some of the astronomers. He helped Carl Otto Lampland reduce plates to determine the position of the asteroid Eros, using mechanical calculating machines. In between, he spent the academic years 1933–1935 in Tucson, completing most of the work for his bachelor's degree in astronomy at the University of Arizona, but the degree was not awarded until he completed a last course *in absentia* in 1937. He took a leave in 1941–1942 to do graduate work in astronomy at the University of California at Berkeley, after which he was promoted to astronomer. Although he did not complete a Ph.D., he was awarded an honorary Doctor of Science degree from Northern Arizona University in 1980. In 1936 he married Bernice Kent, who had been a secretary at the Observatory and a high school teacher. Their only child, Henry "Hank" Giclas, Jr., was born the following year. Bernice died in 2003.

During the 1930s Giclas, working under Lampland, made many measurements of positions of asteroids and comets, some of them on the plates taken by Clyde William Tombaugh in his search for additional planets. Giclas continued to photograph and measure positions of minor planets and comets throughout his career, usually assisted by Mary Lou Kantz, and he often provided positions of newly-discovered comets to those, especially Leland Erskin Cunningham of the University of California at Berkeley, who wished to calculate their orbits. He discovered several comets, including periodic comet 84P/Giclas, and some eighteen asteroids, including a few whose orbits take them near Earth. He named (1886) Lowell and (2118) Flagstaff for his observatory and city. Asteroid (1741) Giclas was named in his honor by its Indiana University discoverers. In 1949–1954 he and Robert Howle Hardie searched for solar variation by making photometric observations of Uranus and Neptune.

Giclas continued to do many jobs around the observatory, from painting a dome (with Tombaugh holding the ladder) to the distasteful assignment of evicting Lampland's widow from the home observatory founder Percival Lowell had built for the Lamplands forty years earlier. He made use of his engineering background in making site surveys for locating new telescopes, designing new sites, and designing and erecting domes for new telescopes. In about 1952 he was appointed executive secretary of the observatory, and took over the administrative work. By this time there were grants to oversee, payroll had become more complicated with social security and other deductions, and the Director, V.M. Slipher, refused to deal with such matters. For the next few years Giclas did all the bookkeeping, but eventually a secretary/bookkeeper was hired. Giclas continued to be in charge of the administrative work until about 1974, when the accounts were computerized and Robert Lowell Millis took over.

Tombaugh had photographed the entire sky visible from Flagstaff with a 13-inch (33-cm) refractor from 1929 to 1945. While he made his most famous find, Pluto, early in the search, the set of plates was of enormous use in discovering everything from asteroids to the distribution of clusters of galaxies. It became clear that if the survey were repeated after some years the two sets of plates could be "blinked" and proper motions determined for vast numbers of stars. This became Henry Giclas's most important work. He supervised the Lowell proper motion survey of

the northern hemisphere from 1957 to 1971, when the catalogue of 8991 stars with proper motions greater than 0.26 arc seconds per year was published in the *Lowell Observatory Bulletin*. Most of the blinking was done by Robert Burnham, Jr. (who wrote and self-published his famous *Burnham's Celestial Handbook* during this period) and Norman Gene Thomas. The same telescope was used and plates 14 x 17 inches (36 x 43 cm) each covering 11.5 x 14 degrees were made. Giclas used these plates to discover about 1500 white dwarf candidates and also photographed a subset of the faint proper-motion objects with the 72-inch (183-cm) Perkins reflector.

Giclas and his team then extended the proper motion survey to that portion of the southern sky visible from Flagstaff, publishing this work in 1979. By then more years had elapsed since Tombaugh's first-epoch plates had been taken, and they were able to measure proper motions as small as 0".20 per year.

Although he officially retired in 1979, Giclas kept his office at Lowell—and used it nearly every day—until 2006, when he was 95. In his later years he wrote a lengthy set of reminiscences, practically a history of Lowell Observatory from 1930, and did fund-raising for the Observatory. Lowell's sole trustee, William Lowell Putnam, was quoted as saying, "Whenever any us wanted to know anything about the history of this place, we'd say, 'Go ask Henry.'" Unlike many of his colleagues, who remained on Mars Hill, he and his family lived in the town of Flagstaff from 1953, and he was greatly liked and esteemed in the community. He met with and drank with the leaders; he served on the water board and as president of the Northern Arizona Pioneer Historical Society; he was active in the Elks Club; and for decades he met regularly with a group of local citizens for breakfast. He served as an adjunct professor at Northern Arizona University from 1972 to 1990. Both he, in 1977, and Bernice, six years earlier, were honored by the local newspaper as Citizen of the Year.

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