



Observers at the Pontiac Observatory made some of the earliest time-lapse movies of the sun and its prominences in the 1930s. *Historic Footage Courtesy Of Pontiac Observatory*

AKLAND COUNTY

Towering task: Astronomy buffs fight to save abandoned observatory near Pontiac

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On a wooded knoll on private property in Lake Angelus — less than a mile from the Great Lakes Crossing shopping mall in Auburn Hills — stands a hidden landmark to the history of science, astronomy and technology in Michigan.

It's an Art Moderne astronomical observatory from the 1930s — a little rusty but almost completely intact. A valuable collection of vintage scientific equipment, including telescopes, controllers and a device invented on-site called a "spectroheliokinematograph," is locked up inside.

At a time of growing public interest in science as well as in photography and cinema, the work done at the observatory — specifically, time-lapse movies of the sun — wowed the world. But so did the fact that the astronomers who built the observatory were all amateurs, men with day jobs who just loved to stargaze and tinker.

"It's probably one of the most compelling scientific stories in Michigan over the last century," said Jim Shedlowsky, an amateur astronomer who is part of a group that has been advocating for the preservation of the observatory since the 1990s.

But outside of stargazing communities, the McMath-Hulbert Observatory, which has been privately owned by Lake Angelus businessman Jim Kinsler since 1991, is more of a well-kept secret than a local landmark.

Shedlowsky and his fellow astronomy buffs want to change that.

They're seeking national historic status for the site and preservation of the buildings and equipment — a crusade that has put them at odds with Kinsler and left the observatory's future as cloudy as a Michigan winter sky.

Among astronomers, the McMath-Hulbert Observatory has "a worldwide reputation" for its contributions to solar research, Shedlowsky said. It made the first moving pictures of solar prominences and the first second-to-second film of a total solar eclipse. The films made at the observatory were distributed to schools all over the country, giving thousands of kids their first look at the solar system in motion.

Shedlowsky visited the observatory for the first time as a Boy Scout in 1949, when he watched a McMath-Hulbert movie about solar prominences.

"I was just blown away," Shedlowsky said. "It influenced the rest of my life."

A push for historic status

The observatory was operated by the University of Michigan from its earliest years until 1979, when funding issues and other practical considerations led the university to end its lease on the property. It has been in private hands since then. A deed on the property requires it to be used for scientific research, and descendants of the founders wanted the observatory maintained as a memorial to their discoveries.

For some 25 years — with Kinsler's support — the McMath-Hulbert Astronomical Society, or MHAS, hosted public stargazing and educational programs at the observatory and helped keep the place in shape. But today, the observatory is no longer open to the public, and MHAS is no longer allowed on the premises.

Members of MHAS said Kinsler asked them to leave in 2021 over a dispute about insurance after years of what they describe as a hot-and-cold working relationship.

Kinsler confirmed that he no longer works with MHAS or allows them on-site due to a dispute over liability insurance with the group as well as his concerns about MHAS not keeping "a record of contributions, cash and materials" and other complaints. He said he worked closely with the founders of MHAS in the 1990s to set up their 501(c)3 and financially supported them over the years.

He said he is now working to find a new owner to bring MHO back online.

"I believe that the observatory is a true gem, and I am actively trying to identify a group I can donate it to that will have the financial assets and workers to bring it back to its glory days of programs to enrich the local area," Kinsler told The News.

"Though I have been offered a large amount of money for several of the world-famous pioneering instruments at the observatory, I have kept every piece there. The whole facility is unusually intact, even down to the original mechanical calculating machines, which are treasures themselves."



1: Tom Hagen, left, and another member of the MHAS inspect the Secasi Monochromatic Heliograph and Flare-Patrol Telescope currently installed in Tower One at the McMath-Hulbert Observatory. in 2013. 2: A room on the first floor still houses this mechanism for controlling Tower Two. 3: A member of MHAS inspects the spectrograph in Tower Two. *McMath-Hulbert Astronomical Society*

From temporary headquarters at the offices of the Oakland County Historical Society — and, sometimes, a strip-mall coney island eatery in Pontiac — MHAS has launched an effort to try to add the observatory to the National Register of Historic Places, the federal government's official list of sites worthy of historic preservation. The nod, society members argue, could draw local attention to the historical significance of the observatory and generate political goodwill for preservation efforts.

State officials said the McMath-Hulbert Observatory is eligible for listing on the National Register "for its important contributions to the early scientific development of solar observation and understanding," wrote Todd Walsh, National Register coordinator for the Michigan State Historic Preservation Office, in a letter to the MHAS.

But Walsh said the application cannot be completed until new photographs are taken that confirm the property's condition and historic integrity. Photos taken by MHAS members when they had access to the property are now more than two years old, beyond the time limit set by National Register nomination guidelines.

"For any nomination, not just this one, we do not go beyond two years," Walsh told The Detroit News. "The reason for that is the nomination is not just a historical document but a record of the property at the time that it's nominated."

Astronomical society members also face a less technical challenge: A property can't be added to the registry at all if the owner objects.

Kinsler, who owns a fuel injection company based in Lake Angelus, said he is not opposed to listing the observatory on the National Register but that he is "deeply disturbed" that MHAS has pursued designation without his permission.

"I believe the fact is that the (observatory) is what it is, with all of its history. The listing would not change any of that. I am not sure what I will do, but I will attempt to do what is positive," he said. "I have to be especially careful that the status will not negatively affect its future, not even being an inconvenience for a future owner."

A National Register nod may bring positive press, open state historic tax credits and unlock grants that look favorably on National Register status. But it comes with no guarantees or protections. For the observatory, and for the people who are trying to save it — most now in their 80s, as is Kinsler himself — time might be running out.

Origins of an observatory

The idea for the observatory began to take shape in the 1920s, when a father-and-son team in Michigan began making some fascinating observations with homemade telescopes — and rudimentary film cameras.

Robert Raynolds McMath would later claim to have been messing around when he pointed a camera through the eyepiece of one of his father's telescopes and filmed some shadows passing over the surface of the moon.

Robert and his father, Francis McMath — a renowned civil engineer who had led the company that built the Quebec Bridge — had been tinkering with telescopes for years. Robert had even built his father a simple observatory dome at the family's home in Clarkston, powered by an experimental motor drive he'd built in the workshop of his metal stamping company.

But when University of Michigan astronomer Ralph H. Curtiss caught a glimpse of Robert McMath's moon movies, he was in awe. Astronomical motion pictures, Curtiss believed, could quite literally change how scientists and astronomy students looked at the solar system.

Curtiss urged the McMaths to build out a serious observatory, a headquarters not only for astronomical research but for the production of this celestial cinema. The McMath summer home on Lake Angelus was available and ideally situated. The McMaths were advised in the construction and development of the observatory by their

friend and frequent collaborator Henry Schoolcraft Hulbert, a judge of the Wayne County juvenile court who had been a serious stargazer since the 1880s.



A 1936 illustration of the McMath-Hulbert Observatory. The observatory was deeded to the University of Michigan by Robert R. McMath, Francis McMath and Judge Henry S. Hulbert in 1931. A 50-foot tower telescope was added in 1935/1936 and a 75-foot tower telescope and office building added in 1940. *Courtesy The Bentley Historical Library, Bentley Image Bank, University Of Michigan Digital Collections.*

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Robert designed and built what came to be known as Tower One of the McMath-Hulbert Observatory — a 25-foot-tall tower capped with a 17-foot-wide wooden dome housing a 10.5-inch equatorial telescope.

On July 1, 1930, the observatory officially began operations. The team made their first moving images of the moon that same day.

Shortly after the construction of Tower One, the McMaths and Judge Hulbert deeded the observatory's structures and equipment to UM. The three men were named honorary curators of astronomical observation at the university.

The relationship gave UM a privately funded cutting-edge observatory and the practical genius of its three self-taught founders. It gave the McMaths and Judge Hulbert the credibility of the university and the expertise of its faculty, especially its director of observatories, Heber Doust Curtis, one of the world's foremost observers of solar eclipses. (Robert McMath wrote in Curtis' obituary in 1942 that he was "constantly" in touch with Curtis about the observatory and that his influence on the observatory "cannot be measured.")

Discoveries in the heavens

The educational potential of the moving pictures was clear to everyone from the start. It was easier to show a movie to an entire class of astronomy students than to queue everyone up at a telescope eyepiece, and it saved a lot of observation time. "Our standard lunar film, ordinarily projected in about 20 minutes, is the equivalent of 92 hours of lunar observation," Robert McMath wrote in a 1939 paper.

But almost as soon as the cameras started to roll, the astronomers grasped the huge scientific potential of their technology. Astronomy is "a kinetic rather than a spatial field of science," Robert McMath wrote, and movies made it easier to see and study changes in celestial bodies, such as the path of shadows in lunar craters or how sunspots drift and change.

In 1932, they debuted an invention specially designed to capture moving images of the sun. They called it a *spectroheliokinematograph* — essentially, a spectrohelioscope, which can observe specific wavelengths of light, rigged up to a film camera.

Using the spectroheliokinematograph, the astronomers at MHO captured the first moving images of solar prominences. The breakthrough earned Judge Hulbert and the McMaths a prestigious John Price Wetherill Medal "for their design and construction of novel apparatus for the making of motion pictures of astronomical subjects."

The success of the spectroheliokinematograph convinced MHO astronomers to focus their efforts on the study of the sun. In the summer of 1935, construction began on a second tower that would be twice as tall as the first, with a 30-foot underground well that allowed the telescope to capture longer paths of sunlight.

The steel-domed tower, funded in part by contributions from the Detroit-based McGregor and Rackham Funds and developed in close collaboration with astronomers from the esteemed Mt. Wilson solar observatory in California, was completed in 1936.

Observations made at Tower Two allowed the astronomers at MHO to disprove the "light pressure theory" of solar prominences, which was popular at the time, and provided evidence that suggested the existence of a solar atmosphere. The films made at Tower Two brought national attention to the observatory and were screened all over the country to scientists and schoolkids alike.

A third and even taller telescope tower that would allow the astronomers to make even larger images of the sun was constructed just a few years later, in 1939, along with a 5,600-square-foot building that provided the astronomers with office, lab, classroom and darkroom space, as well as an on-site machine shop. The building was named in honor of longtime MHO benefactor Tracy McGregor, who died in 1936.

The University of Michigan would continue to operate and staff the observatory for the next 50 years. Many luminary UM astronomers worked at MHO during those years, including Helen Dodson Prince, Leo Goldberg and Keith Pierce.

Goldberg, who joined the staff of the MHO in 1941 just a few years out of Harvard University, worked closely with Robert McMath to develop a bombsight that the U.S. Navy used for anti-submarine operations during World War II.

The team at the observatory also monitored solar flare and sunspot activity and warned military officials about any possible disruptions solar activity could cause in radio communications. Robert McMath was awarded a Presidential Medal of Merit in 1948 for MHO's contributions to the war effort.

After the war, Robert McMath was invited by the National Science Foundation to head up a panel of leading U.S. astronomers who were asked to come up with an "astronomical policy" for the nation.

A key recommendation of the panel called for the creation of a national observatory — a vision realized in 1958 with the establishment of the Kitt Peak National Observatory in the Quinlan Mountains in the Arizona-Sonoran Desert. Robert McMath was involved with the development of the Kitt Peak Observatory until his death on Jan. 2, 1962, at the age of 70.

Observatory changes hands

For over a decade after Robert McMath's death, the university conducted business as usual at MHO under the directorship of Orren Moehler, who had led the observatory since 1961. Then, in 1979, the university ended its lease at the observatory and returned the property to the McMath family.

Professor Michael Meyer, chair of the UM's Department of Astronomy, told The News in December that the university "returned the observatory to the McMath family when federal support for its scientific use ended."

Correspondence in the university's archives between deans, lawyers and observatory staffers outlined a constellation of other reasons.

Lake Angelus was a long drive for professors from Ann Arbor, for one. Solar observation wasn't as sexy as it once was, and to the extent that scientists were interested in it, there were better facilities for it (especially — thanks in no small part to Robert McMath — at Kitt Peak). The professors who had once been champions of MHO had died or retired, and no new faculty members had stepped up to keep it running.

The university tried to help the McMaths find a successor to the property, offering to donate it to Oakland University or the Cranbrook Institute of Science. Both passed. A Birmingham dentist proposed buying the entire McMath family property and donating the observatory back to the university, which wouldn't have solved any of the university's problems.

Robert McMath's daughter, Madeline Sloan, wanted the observatory preserved as a memorial to her father and grandfather, perhaps as a kind of museum and educational center. One idea was to give the observatory to the

village of Lake Angelus, which would steward it for that purpose. The village commissioners ultimately rejected the plan over concerns about what it could cost the community down the road.

A solution finally emerged in the early months of 1980, when businessman Stanford R. Ovshinsky proposed to purchase the observatory and use it as a research center for his solar cell company, Energy Conversion Devices.

"In 1929, there *was* a great need for more knowledge of the sun," Ovshinsky was quoted as saying in an Aug. 8, 1980, memo to Sloan. "Now, in 1980, the great new need is for astute application of data and of new information to produce functional energy from the sun's rays."

Ovshinsky's company made some promises to Sloan. A memorial plaque would be installed by the entrance of the McGregor Building, inscribed with the names of the observatory's founders. A former lunchroom in the McGregor Building would be converted into a tiny museum on the history of the MHO, with framed photos of the founders on the wall and the spectroheliokinematograph on display. And — crucially, for the preservation of the observatory — all of the scientific equipment at the observatory would stay there, under the company's stewardship.

By 1990, Energy Conversion Devices was struggling financially. The Detroit News reported in March that year that it had sold its Troy headquarters in a sale-leaseback deal to generate cash. The company reported losses of nearly \$3.5 million for the six months ending December 31, 1989.

Oakland County property records show that the property was sold to Robert Welch of Madison Heights for \$225,000 in a deed dated March 23, 1990. A little over a year later, Welch sold the observatory to Kinsler for \$148,500.

Kinsler, who has lived in Lake Angelus since 1982, said that Welch had been in touch with the legal group that was doing work for the build of the Great Lakes Crossing Mall. The group wanted to buy the observatory and use it as a "bargaining chip" against Lake Angelus' efforts to stop the development of the mall, Kinsler said.

Kinsler said he intended to own it only as long as it took to find a worthy buyer. He has now owned it for 34 years.

Keeping the story alive

In 1994, not long after Kinsler bought the property, a group of amateur astronomers organized the McMath-Hulbert Astronomical Society to keep the observatory's story alive.

Newspaper clippings from the mid-1990s show a lively calendar of events at MHO — a public viewing of a lunar eclipse in 1996, a "haunted towers" Halloween event and the "Discovery" science camp for kids, which hosted some 40 Pontiac kids ages 7 to 17 to tackle hands-on science projects when school was out.

Jim Shedlowsky, who lives in Waterford Township, joined the group in the mid-2000s after hearing about the MHO in another local astronomy club, sparking a memory from his Boy Scout days.

"It clicked in my mind. I said, 'Is that place still around?'" Shedlowsky said.

He joined the group on Saturday mornings to help with maintenance projects around the observatory, taking care of the grounds, lubricating tracks on the domes and fixing broken shutters.

The group has never had a formal operating agreement with Kinsler — just an unwritten understanding, Shedlowsky said, that the MHAS would take care of the observatory on Kinsler's behalf and with his blessing.

Since Kinsler's falling out with the astronomical society, the group has continued to try to secure a future for the observatory. Last year, the MHAS held a brainstorming and strategic planning session in Ann Arbor, where they imagined that the observatory could be transformed into an educational center for students of astronomy, but also environmental sciences and skilled trades. (The buildings and all of that equipment need work, after all.)

Costs could be supported by grants, MHAS memberships, crowdfunding and venue fees — perhaps some revenue could even come from renting out a little cottage on the property that is not considered historic.

In another scenario, the Oakland County Pioneer and Historical Society could become the steward of the observatory, Executive Director Michael McGuinness said.

Though the historical society is not in a position to purchase the observatory, McGuinness said the board would be "honored to receive it" and assume responsibility for its care.

"The door is open," he said, for Kinsler to offer it to the society. "I'm grateful that he has saved it. He is one of the stewards of this hidden gem, just like Stan Ovshinsky before him and UM before him," McGuinness said.

But for now, the fate of the observatory rests with Kinsler.

Kinsler told The News he has identified three potential future owners of the observatory. He did not name them but said he is having "very pleasant and pleasing discussions" with each of them.

"I deeply love the observatory," Kinsler said. "I would love to always own it, but I cannot leave it in my estate because none of my decedents want to deal with it or know how."

Members of the MHAS, meanwhile, continue to try to raise awareness about the secret scientific wonder on the lake.

There is a substantial community of amateur astronomers in the Metro Detroit area, and although members of the MHAS are getting older, plenty of young people are involved in local stargazing clubs, Shedlowsky said. But it's hard to get them involved with MHAS' preservation efforts at the observatory because they aren't allowed on the site.

Since UM released the property in 1980, the building has been deed-restricted. It must be used for scientific research, it cannot be used as a place of residence and its occupancy is limited to 30 people. The restriction provides some measure of protection for the observatory — at this point, MHAS members mostly worry that the property will be "demolished by neglect."

"We are probably — almost certainly — the only people left who know the history (of the MHO) from a local point of view, a national point of view and a technical point of view," Shedlowsky said. "Once we're gone, some of that

history will be lost. And that would be a shame."

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