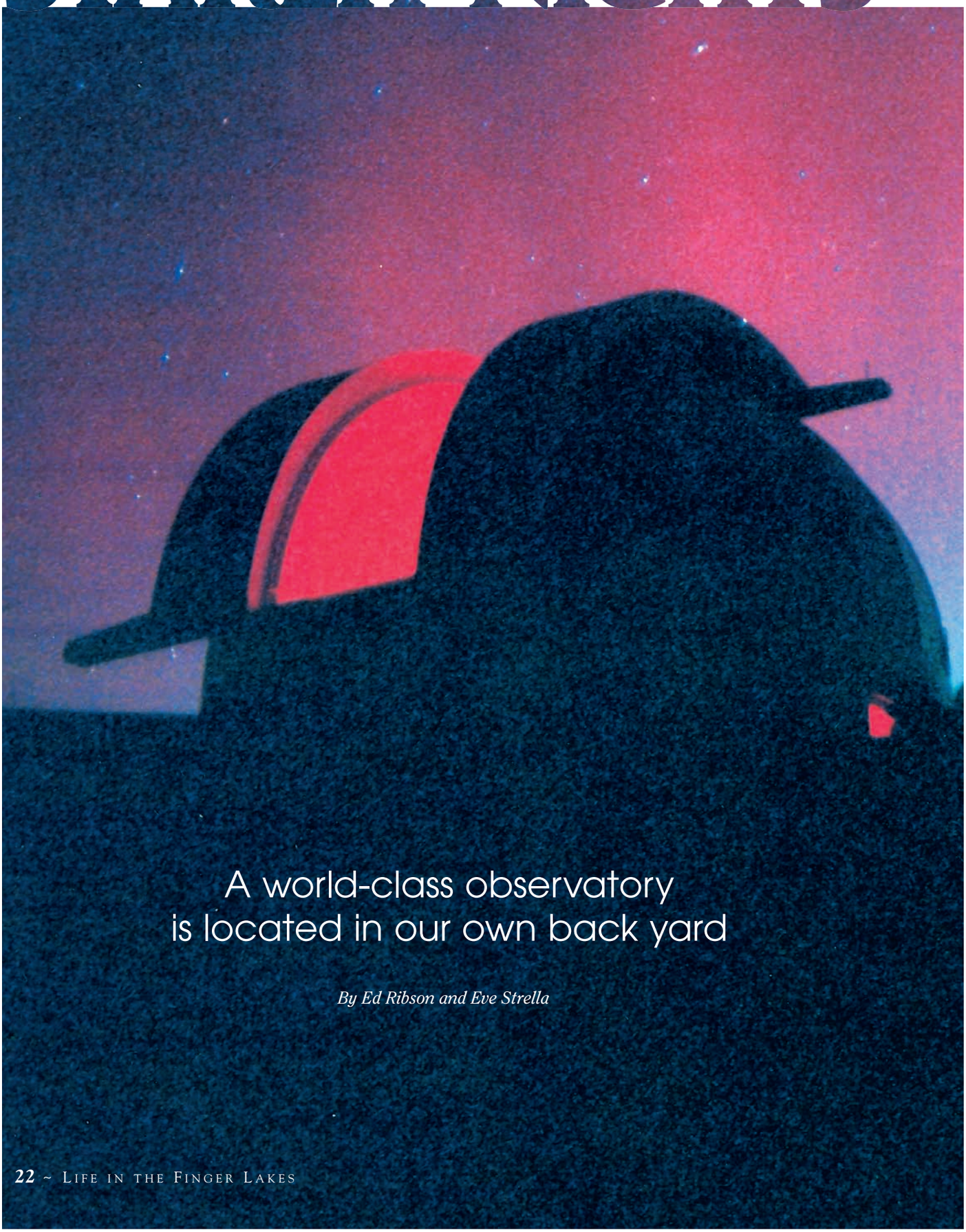
STARLIT NIGHTS



A world-class observatory is located in our own back yard

By Ed Ribson and Eve Strella

ON GANNETT HILL

The observatory is silhouetted against an amazing display of the aurora borealis.
Photo by Alan S. Russell

Photos by Eve Strella

About 40 miles south of Rochester on Route 64, a large sign for Ontario County Park stands at the foot of West Gannett Hill Road. The drive up the hill makes automatic transmissions downshift and ears pop. At the top, the road comes to a T-shaped intersection. The park entrance lies off to the right. To the left, South Gannett Hill Road continues a short distance uphill. Just over this rise, a fenced area of park-like lawn comes into view on the right side of the road. A sign announces to visitors that they have arrived at the University of Rochester C. E. K. Mees Observatory.

The observatory welcomes the public for free scheduled tours on Friday and Saturday evenings throughout June, July and August. Visitors drive through an open gate in the black iron fence. As they proceed up a winding gravel road, they may sight deer among the trees casting evening shadows across the hill. Farther up the road, visitors may also notice a granite monument near a pond off to the right. This monument, designed by the Medical Center Anatomical Gift Program, commemorates deceased individuals who have donated their bodies to science. A little way past the monument, a sign at a fork in the road directs visitors to the Gannett Hill House.

History

The Hill House, the former summer home of the Gannett family, is a visible reminder of the property's history. Frank E. Gannett, founder of several upstate New York newspapers, including Rochester's *Democrat & Chronicle*, was

The telescope under the dome of the Mees Observatory was made by the same firm that constructed the Hubble Space Telescope. Red-light illumination, says Ed Ribson (below), allows skygazers' eyes to quickly adjust to peering up into a dark sky.

born on Gannett Hill in 1876. While Frank was still in his youth, the Gannett family sold the property. On January 16, 1940, Mr. Gannett announced his candidacy for the presidency but later failed to win the Republican Party nomination. As a consolation prize and 20th anniversary present, his wife Caroline purchased the former Gannett property and, on a site adjacent to Frank's birthplace, built the Hill House that same year.

In 1957, Frank Gannett died at the age of 81. A few years later, Ontario County began to purchase nearby acreage to establish a park. Mrs. Gannett was reluctant to sell her 46 acres of the hill to the county for fear that funding would be insufficient to properly maintain and police the beautiful summer estate.

At about the same time, the University of Rochester was in the early stages of planning an observatory. The university owned a 15-centimeter Alvan Clark refracting telescope but was interested in siting a larger, state-of-the-art reflecting telescope in the Bristol Hill region. Faculty members scouted out several sites in car and on foot but did not initially explore Gannett Hill because of the "activity of the state in purchasing lands and the greater distance from the city."

However, the university became interested in Gannett Hill when Dr. Arnold Weisberger of Eastman Kodak suggested to Dr. Morton Kaplon, who then chaired the University of Rochester Department of Physics and Astronomy, that the Gannett property might become available. Clifford Carpenter, a *Democrat & Chronicle* editor, arranged a meeting between Caroline Gannett and Dr. Kaplon. Assured that the university would adequately care for the property, Mrs. Gannett was happy to donate it for educational purposes. She requested only that her children and grandchil-

dren have access and that, if the property were no longer used for the expressed purposes, ownership would revert to the Frank E. Gannett Newspaper Foundation.

In addition to the Gannett property, the university purchased 23 acres of adjoining Ontario County Park land, which included the summit where the observatory would be built at an elevation of 2,260 feet above sea level. Mr. and Mrs. Lee McCane, next-door neighbors of the Gannetts, also contributed land. Grants and contributions totaling $237,300 from the National Science Foundation, Eastman Kodak, the Mees family and the New York State Science & Technology Foundation funded the project.

The Scenic Tour

On May 8, 1965, the observatory was dedicated in honor of C. E. Kenneth Mees (1882-1960), the former Eastman Kodak director of research who had pioneered the development of sensitive emulsions for astrophotography. At the time of its dedication, Mees Observatory was reportedly the largest, best-equipped observatory east of the Mississippi. The dome houses a 61-centimeter Boller and Chivens reflecting telescope built by Perkin Elmer Corporation, the same firm that constructed the Hubble Space Telescope.

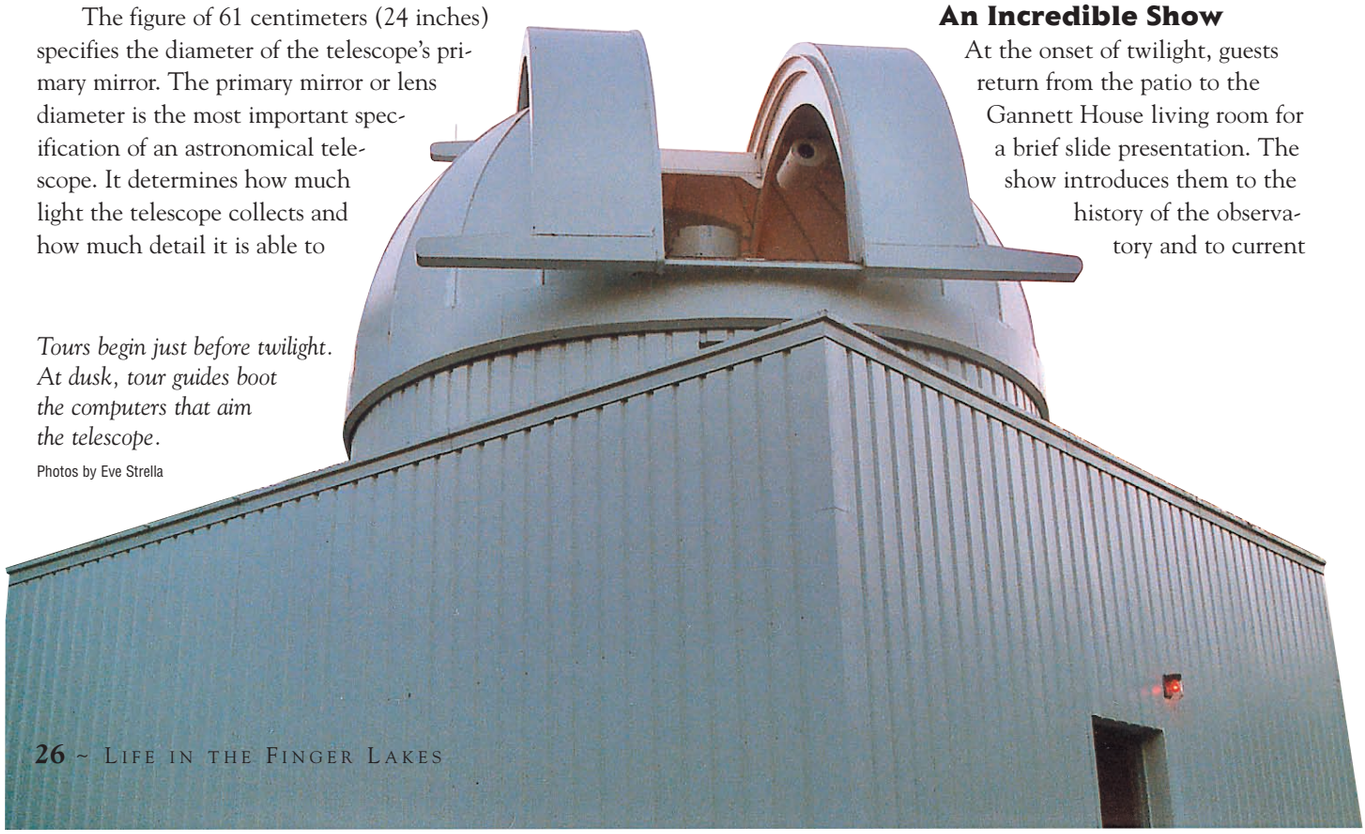
The figure of 61 centimeters (24 inches) specifies the diameter of the telescope's primary mirror. The primary mirror or lens diameter is the most important specification of an astronomical telescope. It determines how much light the telescope collects and how much detail it is able to reveal. The Mees telescope uses mirrors of the Ritchey-Chretien configuration. This design, which produces a high quality image across the entire field of view, is the same used in the Hubble Space Telescope and in most large earth-based telescopes.

The Gannett House now provides the observatory with office and library space as well as living quarters for staff who stay overnight. It is also the first stop on public tours. When visitors arrive, they assemble in the living room or stroll out on the slate patio overlooking Canandaigua Lake. From this vantage point, they can gaze across the tops of the low clouds that occasionally hang above the lake's southern tip.

Before each tour begins, guides take the opportunity to introduce themselves and meet their guests. Tour guides are either University of Rochester astronomy majors or members of the Astronomy Section of the Rochester Academy of Science, a regional organization that promotes public awareness of the natural sciences. Visitors may arrange to tour the observatory as individuals, in families or as members of community groups. Some come to Mees with a specific interest in astronomy, but many simply wish to see the observatory or to enjoy the beauty of the night sky.

An Incredible Show

At the onset of twilight, guests return from the patio to the Gannett House living room for a brief slide presentation. The show introduces them to the history of the observatory and to current



Tours begin just before twilight. At dusk, tour guides boot the computers that aim the telescope.

Photos by Eve Strella

astronomical research in which the University of Rochester is involved. The presentation then 'walks' visitors through a tour of the cosmos. The narrator introduces the audience to the basic structures of the solar system and the galaxy and attempts to impart an idea of the scale of the universe. Many of the specific objects to be viewed that evening are also discussed. The narrator emphasizes that astronomers rarely make discoveries merely by peering through telescopes. Rather they use earth-based and orbiting telescopes to collect and analyze data from different wavelengths of the electromagnetic spectrum (of which visible light is only a tiny portion) to understand the nature of astrophysical processes. A basic understanding of these processes helps visitors appreciate what they will see through the telescope.

After the slide show, visitors either walk or drive the steep quarter-mile distance from the Gannett House up to the observatory building. In the gathering dusk, they enjoy the view from the observatory deck while tour guides boot the computers that aim the telescope. Remote from the glare of city lights and other sources of light pollution, the dark sky presents a spectacular vista.

On midsummer nights, the Milky Way meanders from overhead down toward the southern horizon. The telescope's wide-angle viewfinder resolves this luminous band into myriad suns strewn like stardust across the firmament. Dark regions of interstellar dust divide the Milky Way into starry lanes scattered with glowing patches of nebulosity. The telescope reveals the ethereal beauty of these fluorescing clouds of ionized hydrogen. Like the Eagle Nebula, famous for its "pillars of creation" imaged by the Hubble Space Telescope, many of these are regions of active star birth. The telescope also resolves open star clusters consisting of hundreds or thousands of individual

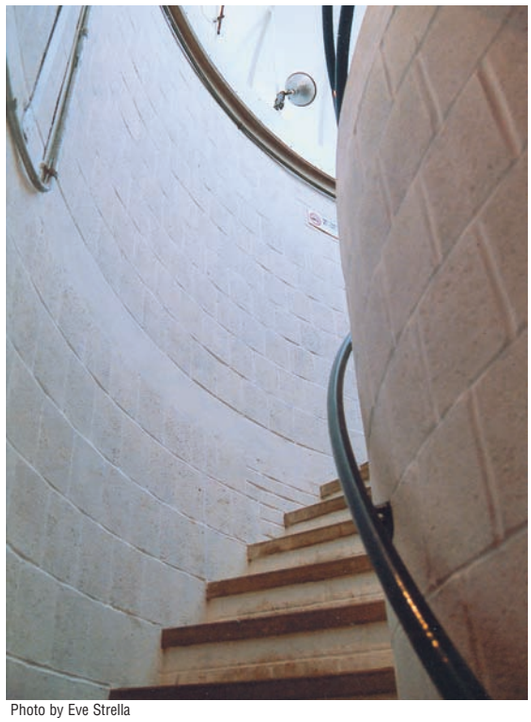


Photo by Eve Strella

stars that had once formed in such stellar nurseries.

Cosmic Rationale

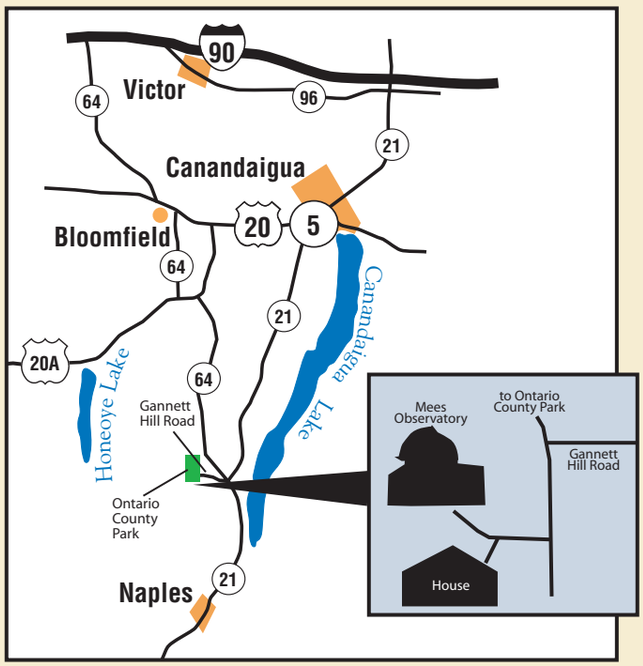
Viewing such structures through the telescope, visitors are better able to understand the natural history of our own sun. The star that rules our solar system was most likely born several billions of years ago in a cloud of dust and molecular hydrogen that had massed near the plane of the Milky Way's spiral arm disc. The sun probably originated as one member of a cluster that eventually dispersed into a looser stellar association.

Visitors may also view another type of nebula – one that represents our sun's probable fate billions of years into the future. When a dying star of average mass ejects its atmosphere, the expanding envelope of gas traces intricate, cylindrical patterns about the central star. Ultraviolet radiation from the dying star ionizes the gases, which then glow from the recombination of separated electrons and positive ions. The Ring Nebula in Lyra is one such resultant nebula. It lies about 2,000 light-years distant from our solar system and has a diameter roughly 1,600 times the distance of Pluto from the sun.

In addition to views of nebulae, star clusters and distant galaxies, Mees visitors often enjoy views of the more familiar planets of our own solar system. Jupiter's cloud belts, zones and Galilean satellites are popular sights, as is Saturn's magnificent ring system.

Since the dedication of Mees Observatory in 1965, the pace of astronomical discovery has accelerated tremendously. Much has been due to the continuing space program, the application of computer technology and enormous advances in both earth-based and orbiting instrumentation.

Under the directorship of Professor William Forest, Mees Observatory continues to operate as a research and teaching facility. Superintendent Kurt Holmes maintains the observatory buildings and grounds, and Tour Director Carol Latta coordinates public tours. For anyone seeking an update on recent developments in astronomy or merely wishing to connect with the cosmos, Mees Observatory remains an ideal place to start.



Reservations

Tour reservations for Friday and Saturday nights throughout June, July and August may be made online at www.rochesterastronomy.com/ur/public or by leaving a voicemail message at 585-275-4385. This line is answered in two to four days. Please be certain to leave a name and full 10-digit phone number for the return call. To ensure that all are comfortably accommodated and have ample opportunity to use the telescope, tour groups are limited to a maximum of 25 visitors per evening.

Directions

Take **Route 64** south past Bristol Mountain into Bristol Springs (about 4 miles past Bristol Mountain) and watch for **Gannett Hill Road** on your right. There will be a sign for Ontario County Park there. Take Gannett Hill Road to the "T". The park is to your right and the road leading up to the Gannett house is to your left. You will come to one more turn off to the right which is the driveway to the house and observatory. When you get to the "Y" go left to the house. Do not drive up to the observatory.

Stardust Observatory is the personal observatory of Ed Ribson and Eve Strella. It is one of several privately owned observatories in Rochester and the Finger Lakes region. Builders Steve Breemes and Mike Coyne constructed the observatory foundation and cylindrical wall. The steel dome houses a 15.5-centimeter refracting telescope built by Astro-Physics of Rockford, Illinois. With the telescope's permanent installation in autumn of 2004, the authors are looking forward to digital imaging of the solar system and deep sky.

Eve Strella and Ed Ribson at Stardust, their private observatory. Ed is a County Health Department official and Eve is CEO of Strella and Associates. Both authors are members of the Rochester Academy of Science Astronomy Section and have worked as Mees tour guides. Mr. Ribson is also a member of the International Dark-Sky Association.