Dyer

NELSON BRYAN

Chancellor Joe B. Wyatt presented a plaque during the November anniversary celebration to Jack DeWitt, E'28. The plaque has been affixed to the twelve-inch telescope that DeWitt donated to the Dyer facility.

KEN SPAIN/VU PHOTO ARCHIVES

The Arthur J. Dyer Observatory sits on a wooded hill ten miles south of downtown Nashville.

Observatory Celebrates Thirtieth Anniversary

by Fay Renardson

Stargazing is an ancient practice. For centuries the heavens and heavenly phenomena have been a source of scientific and mythological speculation and a guide for the seafarer as well as the land traveler. With the construction of modern observatories housing finely tuned instruments to view, analyze, measure, and photograph the celestial sights, stargazing has become a modern science under the leadership of expert astronomers. Such is the history of astronomy at Vanderbilt.

About ten miles south of downtown Nashville near Brentwood on the summit of a sixteen-acre wooded hill on Oman Drive just off Granny White Pike stands the Arthur J. Dyer Observatory, the University's principal astronomical facility. Completed in 1953 and formally dedicated Christmas week that same year—during the national meeting of the American Astronomical Society at Vanderbilt—the Dyer Observatory celebrated its thirtieth anniversary November 17-19 with several events, including Vanderbilt's first Seyfert Lecture, delivered by E. Margaret Burbidge, director of the Center for Astrophysics and Space Science at the University of California, San Diego.

Interwoven with the rich and varied history of the Dyer Observatory is that of the University's original observatory, Barnard Observatory, which stood from 1875 to 1953 on the site now occupied by Rand Hall. Named for Edward Emerson Barnard (one of Vanderbilt's first students and the discoverer of sixteen comets and the fifth satellite of Jupiter), the observatory and its six-inch Cooke refracting telescope were utilized for research in the early years by Chancellor Landon C. Garland and Barnard, and later for teaching purposes and public demonstration. Subsequently, the first tall chimney of the University's power plant impaired sky conditions necessary for stellar studies and rendered the small campus observatory obsolete. (The Barnard telescope, dated circa 1870, is now housed in the Stevenson Center Observatory on the top floor of the physics and astronomy building.)

In September 1946, Carl K. Seyfert, internationally acclaimed for his color photography of star spectra, came to Vanderbilt after conducting invaluable investigations of stars and galaxies at the Yerkes, McDonald, Mount Wilson, and Warner and Swasey observatories. As associate professor of physics and director of Barnard Observatory, he planned to revive and expand the University's astronomy program, which was suffering from a wartime lapse.

Heading the list of projects was a new observatory. During the war years, the John Ferguson family of Cleveland, Ohio gave Vanderbilt a twenty-four-inch telescope mirror of fused quartz. The gift was conditional upon finding the "ways and means" to construct a telescope around the mirror and a modern observatory to house it.

In the January 1954 issue of *Sky and Telescope*, Seyfert wrote: "The finding of these 'ways and means' provided me for the next six years with the most exciting, sometimes heartbreaking and certainly backbreaking days of my life."

Seyfert began his campaign with lectures on astronomy and the proposed observatory to various civic groups. Three years later, after such a lecture at the Rotary Club, Arthur J. Dyer, an engineering alumnus and founder of the Nashville Bridge Company, asked Seyfert how to build a sundial for his Brentwood home. "This was probably the most expensive sundial ever built," wrote Seyfert, "since Mr. Dyer, for whom the observatory is named, and his bridge company became our largest contributors."

Dyer, described as a "most energetic octogenarian," and Seyfert traversed most of the hills in and around Davidson County searching for the most favorable site for an observatory. They found a suitable location on a flat hilltop 1,131 feet above sea level overlooking Radnor Lake. Howard Gardner persuaded his brother, Carl Gardner, who owned the property and lived in Morristown, New Jersey, to donate the land for the observatory site. This initial display of generosity would recur again and again, as about eighty individuals and firms, mainly in the Nashville area, contributed money, building materials, services, and labor to the construction of Dyer Observatory.

In late March 1952 the actual construction of the only graduate research observatory south of the Ohio River from eastern Virginia to western Texas was begun. Seyfert and his family lived in a house trailer on the site during most of the construction. "As the observatory neared completion and the cold weather approached, we scarcely waited for the building to be roofed over before moving into it, while construction was begun on the residence," wrote Seyfert. "In the meantime the historic Barnard Observatory had been torn down to make way for a new university dining hall, and the bricks were used in the construction of the residence."

In addition, substantial grants from the National Science Foundation, Vanderbilt University, and the Research Corporation enabled the observatory to acquire the twenty-four-inch Baker Corrector-Reflector telescope—the first of this type constructed—and its accessories.

The Vanderbilt Board of Trust named the new telescope in memory of Seyfert, Dyer Observatory's first director, who died in an automobile accident in 1960.

The observatory property adjoins the Radnor Lake area. Originally owned by the railroad company, which needed water for its steam engines, the Radnor Lake property was sold with the coming of the diesel engine, explains Arnold Heiser, director of the Dyer Observatory for the past ten years.

"The property was bought with the idea of developing it: draining the lake and building high-rise apartments, condominiums, and tennis courts," Heiser says. Biologists from Vanderbilt and other institutions that used the lake then faced the prospect of losing it. "Development would have lit up our sky," he adds. "We would have lost the research value of the place."

On July 31, 1973, Chancellor Alexander Heard announced that "in order to protect the University's Dyer Observatory," the executive committee of the Board of Trust was appropriating $100,000 toward the purchase of Radnor Lake property by the state of Tennessee.

"The observatory was saved," says Heiser. "To my knowledge, this is the only monetary contribution the University has made to a public cause. The Radnor Lake property—1,100 acres of pristine natural area—provides us with immense protection from developers. Our northern and eastern skies remain the same . . . they have not worsened.

"Now our skylight problem is Brentwood and northern Williamson County. The light from Brentwood to Hillsboro Road is filling up our skies."

In the early years, Seyfert directed the main thrust of Dyer Observatory research programs in the area of galactic structure—the size, shape, and stellar composition of the Milky Way galaxy. The twelve-inch DeWitt telescope is smaller than the Seyfert and equipped for specific research, especially in photometry: measuring the brightness or faintness of celestial bodies with a photoelectric photometer.

Determining the physical properties of stars in eclipsing binary systems has been the major area of research for the past ten years.

Dyer Observatory receives about one thousand visitors a year. Stargazers who brave the dark, winding approach to the observatory are rewarded by a glimpse of a distant planet, or a special angle of the moon on regularly scheduled "public nights"—ten or so a year. A film or illustrated talk also is presented. Four nights a year the observatory sponsors special programs for young people ranging from sixth to eighth graders which draws four hundred students yearly.

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