

Before It Came to Delphos

The Story of Leslie Peltier's 12-inch Telescope

Leslie Copus Peltier (1900-1980) is remembered as a leading amateur astronomer of the 20th century, a major observer for the American Association of Variable Star Observers, and a fascinating writer. Over a 62 year span, he reported more than 132,000 variable star observations to the AAVSO. He was also known for discovering comets and nova outbursts. In 1934, Harlow Shapley, director of Harvard College Observatory, called him "the world's greatest non-professional astronomer".

Many astronomers, both amateur and professional, have been charmed by Peltier's autobiographical book, *Starlight Nights*, first published in 1965. At the start of chapter 26 in this book the reader comes across Peltier's drawing of a beautiful 12-inch refractor, the larger of two telescopes that Peltier used for variable star observations in his later years.

In *Starlight Nights* Peltier recounts how the 12-inch telescope came to his home in Delphos, Ohio, and tells a little about its prior history at Miami University's McFarland Observatory and, before that, at Wesleyan University in Middletown, Connecticut. Here I shall tell a little more about the history of that telescope. Peltier's intensive use of the telescope for making visual observations of variable stars raises the question: Was Peltier the first to use the 12-inch for astronomical research, or was it employed in research at some point in its long history before it came into his hands? We shall see that, before it became Peltier's big gun for faint variables, the 12-inch did see some research use, but that education rather than research was the telescope's main occupation.

The story of Peltier's 12-inch began in the years after the Civil War, in an educational institution set on a rise in Middletown, Connecticut, on the west side of the Connecticut River. Wesleyan University was founded in 1831 and its first astronomical telescope, the 6-inch Fisk refractor made by Lerebours in Paris, was purchased in 1836. A bigger 12-inch, f/15.6, refractor was ordered in 1868 from Alvan Clark & Sons, the famous telescope making firm of Cambridgeport,

Massachusetts, largely through the efforts of John Monroe Van Vleck (1833-1912), then professor of mathematics and astronomy at Wesleyan. In 1868, the telescope was an expensive purchase for the university, with Alvan Clark & Sons charging \$6000 in gold. Admittedly, that price included all the trimmings: micrometer, setting circles, finder, and other accessories.



Figure 1. John Monroe Van Vleck.

By September 25, 1868, Alvan Clark and Sons were able to report to Professor Van Vleck that “Your object-glass is completed and performs admirably. Prof. Winlock of Cambridge, and Watson of Ann Arbor, have examined stars with it in a pretty good atmosphere to test its figure. One new double star has been discovered with it 2^m30^s following α Ophiuc[h]i.”

The *Argus* (Wesleyan’s campus newspaper) for January 14, 1869, noted that the “new telescope has been received, and the workmen are busily engaged in mounting it.” The telescope was mounted in a rather unusual observatory. It was placed on an equatorial mounting within a cylindrical turret atop a student residence that had been called “Boarding Hall” and which was renamed “Observatory Hall”. It is not unusual today to find campus telescopes placed atop academic buildings, but surely there cannot be many astronomical observatories sited above college dormitories.

The new telescope was not merely set atop the old hall, which would not have been strong or stable enough for an observatory. Instead, a new brick pier was built inside a brick tower at the front of the old Boarding Hall, and the telescope was mounted upon that solid base. However, constructing the observatory was not uneventful. The *Argus* for December 8, 1868, reported that “a stone weighing two and a quarter tuns for the summit of the observatory pier, was raised to the top of the building last week (some seventy or eighty feet) and in attempting to get it in position, through some imperfection in the arrangements, it fell about four feet, partly crushing through the first floor. Very fortunately it was stopped there; for had the first floor failed to check it, it would probably have gone to the ground, demolishing one of the students’ beds on its way.” According to Wikipedia, a “tun” of wine had a standard weight of 2240 pounds, so, whether tun or ton was meant, it was a heavy stone.



Figure 2. 19th century view of Observatory Hall, with its cylindrical observing turret. Wesleyan University Library, Special Collections and Archives.

Once the observatory was finished, a knotted rope was kept ready should observers within the dome need an emergency escape from fire. Fortunately for the observers and for the 12-inch, it was never necessary to press that particular fire escape into use.

I have not been able to find any mention of the 12-inch being employed for research in the years immediately following its installation. It was nonetheless a boon to Wesleyan's students. The *Argus* reported in its October 13, 1869, issue that "The Senior Class is divided into small sections, and on suitable evenings, one of these sections is taken into the observatory, where the whole evening is spent in looking at the heavenly bodies. Each individual has ample time to gratify his curiosity. Among the objects viewed the other evening were Jupiter and his moons, some of the most interesting of the double stars, and several of the nebulae. The opportunity has also been afforded to view the sun's spots."

Not all observing attempts were, however, successful. The *Argus* for February 27, 1877, reported that "Four of the members of the junior class in company with Prof. Van Vleck, gave up their morning nap the other day, and rising at three o'clock made their way to the observatory in hopes of seeing a comet, which *the New York Tribune* had predicted visible in our latitude about that time. We are sorry to say their trouble went for naught. Mr. Comet failed to appear." Borrelly's comet, discovered earlier that month, may have been the comet searched for in vain. Bright moonlight until near dawn on the night in question may have made finding the comet difficult. At least light pollution would not have been a problem then.

Formal research with the 12-inch may not have been begun until the arrival in 1890 of William Snyder Eichelberger as instructor in mathematics and assistant astronomer. He would stay six years at Wesleyan before moving to Washington, D.C., where he eventually became director of the Nautical Almanac Office. He arrived at Wesleyan at a time when research and scholarship in general were being accorded a higher priority.



Figure 3. The 12-inch telescope mounted within the cylinder atop Observatory Hall. I do not know for certain which instrument is attached to the telescope, but it may be a spectroscope that the Clarks provided. Wesleyan University Library, Special Collections and Archives.



Figure 4. William Snyder Eichelberger (1865 – 1951).

A search through the SAO/NASA Astrophysics Data System, reveals that Eichelberger made use of the 12-inch in measuring the positions of comets, minor planets, and double stars, resulting in three short publications in the *Astronomical Journal*:

W. S. Eichelberger, 1895, "Observations of Encke's Comet", *Astronomical Journal*, vol. 15, p. 23

W. S. Eichelberger, 1895, "Observations of Minor Planets", *Astronomical Journal*, vol. 15, p. 349

W. S. Eichelberger, 1897, "Micrometric Measures of Double Stars", *Astronomical Journal*, vol. 17, p. 101

I have not come across any publications based upon observations with the 12-inch itself after Eichelberger left Wesleyan. However, there was an earlier attempt to use the 12-inch telescope's 3-inch finder and spectroscope for

observing a total eclipse of the sun in 1869. Professor Van Vleck took the equipment with him to Mount Pleasant, Iowa, where he joined a group planning to observe the eclipse on August 7 of that year. The day was clear and Professor Van Vleck was able to observe lines in the solar spectrum during the eclipse. I have not, however, found a detailed publication of these observations.

In 1914 work began on the new Van Vleck Observatory at Wesleyan. The new observatory opened in the fall of 1915 and was dedicated in 1916. With the new observatory came a new professor, Frederick Slocum (1873-1944), who was hired to take charge of this new endeavor. A new 18.5 inch refractor was planned



Figure 5. Frederick Slocum in 1913.

as the observatory's premier instrument. However, large optical glass blanks were not then manufactured in the United States, and delivery of blanks to be figured into lenses by the Alvan Clark company had to await the cessation of World War I, when their manufacture resumed in Europe. Not until the summer of 1922 would the new lenses, happily 20-inches in diameter rather than the planned 18.5, be installed. In the interim, the 12-inch telescope had one more role to fill at Wesleyan. The 12-inch lenses were placed at the proper location within the tube of the new telescope while its 20-inch lenses were awaited. The old home of the 12-inch, the turret atop Observatory Hall, was removed circa 1916 and Observatory Hall itself was demolished in 1927.



Figure 6. Van Vleck Observatory not long after its construction. Author's collection.

The new Van Vleck Observatory was constructed with a definite research program in mind – the measurement of stellar distances and motions. That would remain the research focus of the observatory for many years, and the 20-inch telescope was able to make a significant contribution in that field. That, however, is a story for another time. Instead, let us follow the history of the 12-inch.

With the 20-inch telescope in place, Wesleyan decided to sell the 12-inch telescope. It was advertised for sale in 1921. The president of Miami University in Oxford, Ohio, made an appeal for \$3000 in emergency funds to buy the telescope, got the money, and the deal was made. *Starlight Nights* recounts how Miami professor William Anderson carried the lenses of the 12-inch back to Ohio packed within his suitcase. At Miami the telescope was set up within the new McFarland Observatory, which was built in 1925 with an addition in 1928. I have not come across mention of any research carried out with the telescope in its new home, although, according to its entry in Warner and Ariail's *Alvan Clark & Sons: Artists in Optics*, the telescope was remounted by the Lohmann Brothers company in 1929. The telescope tube and mounting certainly look different in Figure 3 compared to photographs taken when Peltier operated the telescope. When the

telescope was advertised for sale, Slocum had noted that the original mounting was “old fashioned but usable”.

At McFarland, the telescope was used for classes, student stargazing, and a few Ohio newspaper reports indicate that Professor Anderson also used the telescope for observing prominent sunspot groups. Famed astronomer Allan Sandage (1926-2010) began his college career as a physics major at Miami University in 1943, leaving to go into the navy before finishing his degree.

In 1959, Miami University planned to build a new building on the site of the McFarland Observatory. The 12-inch would not be moved to the top of this new building. Instead, it would have to find yet another home elsewhere. As recounted in *Starlight Nights*, the grounds of Peltier’s Delphos, Ohio, home would become the new abode of both the telescope and the McFarland observatory building. There, over the next two decades, the 12-inch would make its greatest contribution to astronomical research as Peltier, Carolyn Hurless, and occasionally others used it to record the antics of a host of variable stars.

Sources: I have benefited from the account of the 12-inch in *Alvan Clark & Sons: Artists in Optics*, Second Edition, by Deborah Jean Warner and Robert B. Ariail (1995). The history of Wesleyan University in the 19th century is covered in David B. Potts’s book *Wesleyan University 1831 – 1910: Collegiate Enterprise in New England* (1992). The appropriation for Miami University to buy the 12-inch is mentioned in *Annual Reports of the President, the Deans, and Other Officers of Miami University* for 1921-22. The dates for the construction of McFarland Observatory are from a document by Peter Flintermann, reference librarian at Miami University (<http://staff.lib.muohio.edu/~presnejl/MiamiBuildings.pdf>). Early issues of the *Wesleyan Argus* are available online through the Wesleyan Special Collections and Archives website. I thank the Wesleyan archives for permission to use two photographs from their collection. I also thank Vinny Strosnider for copies of letters between Alvan Clark & Sons and Professor Van Vleck at the time of the purchase of the telescope, and for access to his ebook *Return to Starlight Nights*.

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