

ON THE LOCATION AND RESTORATION  
OF AN 1849 HENRY FITZ TELESCOPE

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**Abstract**

The 1849 Henry Fitz refracting telescope was discovered in a state of severe deterioration at a small college. It was painstakingly restored to its original condition with great difficulty due to lack of contemporary instruments or other data on such instruments. An investigation revealed the historical significance of this earliest known existing Fitz telescope.

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During the early 1970's, while browsing through old periodicals, I detected a news note by the eminent astronomical historian and writer, Dr. Roy K. Marshall. This notation pinpointed the location of an early Henry Fitz telescope as Erskine College, a small Presbyterian College in South Carolina not more than one hundred miles from my home in Columbia. Intrigued by the possibility of such an instrument existing by the artisan generally regarded as America's first commercial telescope maker, I decided to investigate the matter. Ironically, Dr. Marshall was at that time Director of the Columbia Science Museum, which provided me with the perfect opportunity to discuss the telescope with him. I did so, and he furnished me with some details, but could not confirm the existence of the instrument at Erskine College.

I next contacted the school and made an appointment to visit the campus. This was my first visit to the college which is located in a rural extremity of the state aptly designated by its town name, "Due West." When I arrived on the beautiful little campus, I was immediately encouraged by both an impressive dome and a clock tower marking the center of the school and rising nearly one hundred feet above the surrounding buildings.

I met with the head of the Physics Department and was quickly led to the telescope which was completely disassembled and piled in a heap in an unused corner of the physics laboratory. I quickly sought and found the delicate objective lens tossed casually in with a box of screws, much to my horror! At that time, I also learned that the instrument had been removed from the dome due to the ravages of the weather, pigeons, and students taking target practice at the dome with rifles. Furthermore, it was also stated that the quartered mahogany tube of the ancient telescope had been saved at the last minute by one of the professors when students were about to utilize it as a cannon upon a football float! Later investigation also revealed that the telescope had on at least two previous occasions been severely damaged and repaired, and in addition, had narrowly escaped a fire, having been just removed from a building that was totally destroyed around the turn of the century.

After negotiations over a period of several months, the telescope was released into my custody, and I transported it to Columbia. My original plans were to assemble the telescope and put it into basic functional condition, in that I was very interested in testing its observational capabilities. Almost immediately, however, I knew that this was no ordinary antique telescope. The unique characteristics and exquisite workmanship of the instrument were clearly evident from the

beginning. As the project got underway, I realized that a simple assembly for a functional application fell far short of the potential that lay hidden beneath the oxidized metals and battered mahogany that concealed the true magnificence of the telescope itself, and the master craftsmanship of Henry Fitz the artisan.

As restoration progressed, the striking beauty of the telescope became apparent. It was also interesting to note the early influence of foreign predecessors upon Henry Fitz as to design. A six-inch refractor made for Wesleyan University in 1836 by Lerebours, and a similarly sized instrument made for the High School of Philadelphia in 1840 by the German firm of Merz and Mahler depict this influence and are reflected in the Erskine telescope. The most interesting comparison of all, however, is with the 9 1/2-inch Dorpat refractor at Pulkovo Observatory, the original German equatorial by Fraunhofer. The two instruments bear such a striking resemblance that the Erskine telescope appears as almost a miniature of the original!

During the restoration, I tried to maintain the absolute maximum degree of authenticity in all aspects of the project. This approach was greatly complicated by the large number of missing components ranging from the tiniest brass screw through the finder and support rings. It was difficult enough to emulate the techniques of a master machinist, but this was further complicated by a virtual absence of contemporary instruments by Fitz from which to deduce the appearance and design of the missing parts. A considerable amount of correspondence provided some help, but the best model was the Erskine Fitz itself, which allowed me to determine the nature and design of the missing components.

One of the most horrifying moments came when it was detected that the 136-year old objective had its crown element forced into the lens cell in reverse of its proper position! This was removed with heat and solvents while exercising great care and undergoing considerable risk.

The project was completed over a period of years during available time and spare hours at a workshop facility provided by the Columbia Science Museum for the restoration.

This unique telescope is one of approximately forty-five by Henry Fitz and his son Harry that remain in existence. Furthermore, of this group, the records indicate it to be the earliest, having been made in 1849. It is singular among the rest due to its engraved date and presentation inscription to Erskine College at Due West Corner, SC. My investigation indicates that even though Fitz made a number of refractors prior to 1849, including a six-inch for which he received a gold medal in 1845 at the Fair of the American Institute in New York, documentation of very early instruments is rare. In listings as early as 1850 of observatories or individual owners with American-made refracting telescopes, I can find but two, both by Fitz, that exceed the Erskine telescope at 5.6-inch aperture. Indeed, investigation also indicates that including all documented refracting telescopes in America at that time, only ten exceeded its aperture, and this grouping includes, of course, the Harvard 15-inch and the Cincinnati 11 1/2-inch refractors both made in Germany by Merz.

This unique and beautiful telescope can be seen as a feature display in the Science and Space Section of the new South Carolina State Museum, Columbia, SC, scheduled to open in the fall of 1986.

## REFERENCES

- Ashbrook, J. 1963, *Sky & Telescope* 25, 326.  
Burritt, E. 1856, *The Geography of the Heavens*, Sheldon and Co., New York, 317.  
Howell, J. 1962, *U.S. National Museum Bulletin* 228, Smithsonian Institution, Washington, D. C., 164.  
Loomis, E. 1850, *The Recent Progress of Astronomy*, Harper and Bros., New York, 158.  
Mattison, H. 1867, *High School Astronomy*, Mason Bros., New York, 242.  
Milham, W. 1938, *Early American Observatories*, Williams College, Williamstown, Massachusetts, 3.  
Moyer, C. 1955, *Silver Domes*, Big Mountain Press, Denver, Colorado, 99.