

TX SCUTI: LOST AND NOT FOUND

WENDY A. WHITING
 Maria Mitchell Observatory
 Nantucket, MA 02554

Abstract

A search for the variable star TX Scuti ends with a question mark.

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Edwin P. Hubble published (1920) a list of twelve new variable stars. Among these was a variable at $\alpha = 18^{\text{h}}23^{\text{m}}45^{\text{s}}$, $\delta = -11^{\circ}15'$ (1900) which was later designated TX Scuti. Hubble found this star to have a variation in magnitude from 12.5 to 14.5 pg. The publication states that nine observations were made, that the period is "long," and that the position was "estimated from the B. D. Chart." In addition, The General Catalogue of Variable Stars cites TX Scuti as having a possible semi-regular period and spectral type M6.

Prior to my work on TX Scuti, Dr. Hoffleit had scanned the Nantucket plates in search of an obviously varying star in the designated position. She found a suspect, and I began the task of determining its period. Immediately it became clear that this star was not changing in brightness to the degree indicated by Hubble. I have plotted the observations for our suspect star, which appears to be an irregular or short period variable of small amplitude, from 13^m7 to 14^m3 pg. At this time, instead of endeavoring to find the period, I set out to find another candidate for TX Scuti by comparison of a contact plate with a wide sampling of the Nantucket plates containing the region in Scutum specified by Hubble. This exercise yielded a negative result as far as TX Scuti was concerned. The method of detection was proven worthwhile, however, when one morning I joyously rediscovered a known variable matching Hubble's description. Disappointment followed, when I found out that although the description fit, the position did not.

Dr. Hoffleit had begun to search elsewhere for an answer by correspondence with Dr. William P. Bidelman at Case Western Reserve University. We had hopes of using the spectral classification to verify the position of TX Scuti. Bidelman's reply, based on spectral type, was that TX Scuti could be found at $\alpha = 18^{\text{h}}24^{\text{m}}00^{\text{s}}$, $\delta = -11^{\circ}13'8$. He expressed the belief that Hubble's coordinates were a bit off, and sent to us a polaroid print upon which he had marked his suspect for TX Scuti. A thorough investigation of the star that Bidelman assumed to be TX Scuti disclosed a faint and, as far as I could tell, non-varying star. The mystery remains unsolved, and any information or clues leading to a solution would be greatly appreciated.

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REFERENCE

Hubble, E. P. 1920, Publ. Astron. Soc. Pacific, 32, 161.