

MATTHEW FONTAINE MAURY'S MISSING STAR

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Abstract

Was the lost comparison star for the asteroid Hygea observed in 1851 a planet, asteroid, or nova?

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The long awaited New Catalogue of Suspected Variables (NSV) by Kholopov et al. (1982) contains a well organized listing of 14810 stars whose variabilities have not been sufficiently verified for them to have been included in the General Catalogue of Variable Stars (Kukarkin et al. 1969). One such star in particular, NSV 12015, at $\alpha = 19^{\text{h}} 23^{\text{m}} 36^{\text{s}}$, $\delta = -20^{\circ} 33'5$ (1950), caught my attention because it had been announced as long ago as 1851. At that time it was assumed to be a new planet; NSV calls it a questioned asteroid. Alas, it is still unexplained.

Matthew Fontaine Maury (1806-1873), a distant cousin of Antonia Maury, was a famous oceanographer and Superintendent of the U.S. Naval Observatory from 1842 to 1861. He reported that a star estimated at magnitude 9.10, used as a comparison star for measuring the position of asteroid Hygea on October 16, 21, and 22, 1850, was later found to be missing. British astronomer J. R. Hind had written to Bond at Harvard that the star showed planetary characteristics. A search in the observed position on August 29, 1851, revealed that the "star" was missing. The observations made the previous year yielded the positions for equinox 1850 shown in Table I.

Maury instructed his associate who had made the 1850 observations, "Mr. Ferguson," to search an area $19^{\text{h}} 20^{\text{m}}$ to $19^{\text{h}} 36^{\text{m}}$, -19° to $-21^{\circ} 20'$, from August to December 11, 1851. To a limiting magnitude of 11, the search was to no avail.

One may wonder why the 1850 observed position was not included in the search area. Excitement about the discovery of Neptune in 1846 had not subsided, and it is natural that the missing object would inspire hopes for the discovery of another such planet.

I wondered if the object might not be either a Mira type variable or a nova. In 1850 only about 24 variable stars were known, and no faint novae. With the characteristic spectra of red stars and novae, the visual appearance of faint variables of these types might have differed sufficiently from more "normal" stars to inspire wishful thinking that they might be non-stellar.

I examined old star charts of the region. No BD star is in the indicated position. However, an approximately 10th magnitude star is close to the published position on the Vehrenberg and several other photographic charts. Hence I examined this star and its close environment on a sample of about 100 Harvard College Observatory patrol plates of the AC series (1.5 inch Cooke lens) taken between 1902 and 1953. I found nothing that varied conspicuously. Hence the star could not have been a Mira type. The nearest prominent known variable is TT Sgr at $\alpha = 19^{\text{h}} 22^{\text{m}} 37^{\text{s}}$, $\delta = -20^{\circ} 12'7$ (10.6 - [17^m.7p]), 20' north of the missing object. Of course, no stellar photographs (other than the very few first daguerreotypes of very bright stars) were taken as early as 1850, so the nova supposition cannot now be tested.

REFERENCES

- Kholopov, P. N. *et al.* 1982, New Catalogue of Suspected Variable Stars, Moscow.
- Kukarkin, B. V. *et al.* 1969, General Catalogue of Variable Stars, Moscow.
- Maury, M. F. 1851, Astron. Journ. 2, 53.
- _____ 1852, Astron. Journ. 2, 91.

TABLE I

Positions of Maury's "Star" for Equinox 1850

<u>Date</u>	<u>Right Ascension</u>	<u>Declination</u>
October 16	19 ^h 17 ^m 42 ^s .81	-20° 44' 57".096
October 21	42.19	55.53
October 22	43.90	54.642