

COMMISSIONS 27 AND 42 OF THE IAU  
INFORMATION BULLETIN ON VARIABLE STARS

Number 4171

Konkoly Observatory  
Budapest  
13 March 1995

*HU ISSN 0374 – 0676*

**ONSET OF PULSATION OF V99 IN M15?**

The variable V99 in the globular cluster M15 was discovered by Mannino on plates obtained in the years 1954-1955 in Asiago Observatory. From about 200 plates a period of 0.27995 day has been determined and light curve constructed. It is interesting to note that this newly discovered RRc variable had been chosen as comparison star by Bailey in his previous study (Bailey, 1919).

Notni and Oleak (1958) measured the brightness of this star on plates taken by Guthnick and Prager previously to Mannino's observations, in the years 1925 and 1933, in Potsdam-Babelsberg Observatory. On these plates light variation could not be detected.

Brightness measurements were carried out on the plate material of the Konkoly Observatory (1937-1991). The light curves folded on Mannino's period, including the Babelsberg material, show clear light variation only in the years 1956, 1957 and 1963.

As the plates were originally obtained to study period changes the temporal distribution of the data is inconvenient and a high level of noise inherent in the photographic method is present. Still existence of any definite periodic variation can be determined. A larger amount of plates were obtained in the years 1938, 1951 and 1990-91. Fourier analysis of the data for these years was performed.

In the Figures the light curves of the years 1937, 1954 (Mannino's data), 1956 and 1963 can be seen folded on Mannino's period and the amplitude spectra with their spectral windows from the years 1938, 1951, 1954 (Mannino) and 1990-91.

The Fourier analysis of the data of 1925 and 1937 does not show any frequency but noise. We reanalysed Mannino's (1956) observations and we could confirm that the period of the star in 1954 and 1955 given by Mannino was correct.

In 1938 a period of 0.28747 day and 0.1 magn amplitude was found. The period differs from the one given by Mannino by about 0.007 day. This would be far beyond the rate of period change typical for RRc stars. So it can be concluded that the deviating period and the small amplitude of the light curve might show the presence of a non radial pulsational component. In the year 1951 the spectrum shows noise with increased amplitude which would indicate scatter of the data exceeding observational error.

The light curve of 0.40 magn amplitude from 1954 and 1955 defined by Mannino is that of a typical RRc variable of radial mode pulsation. The same holds for the Budapest material from the years 1956 and 1963. From the seventies the limited number of the data shows only scatter slightly exceeding the photographic error. At any rate it suggests diminishing amplitude of any of the periods.

## M15 V99 1937-1954-1956-1963

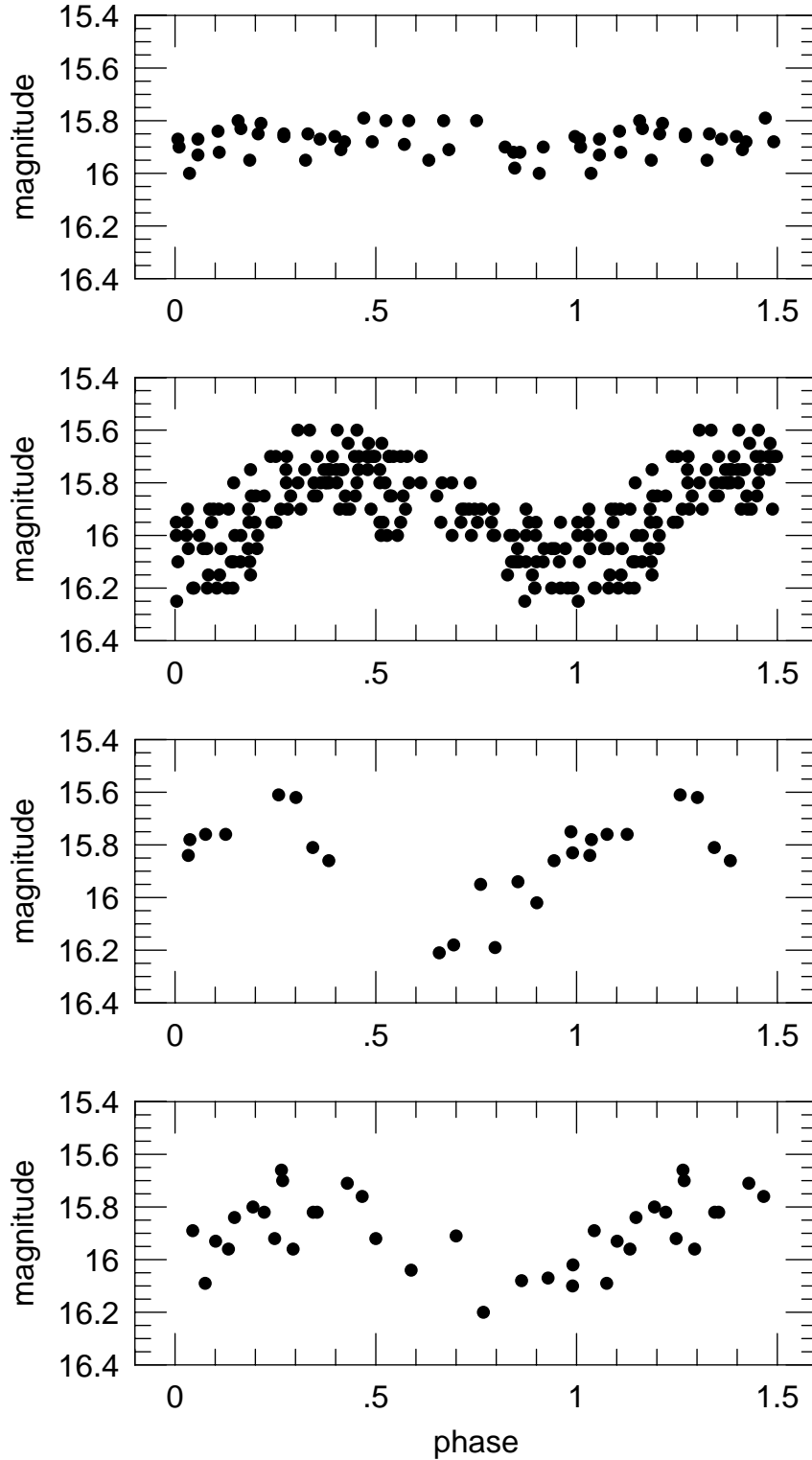


Figure 1. Light curves from Budapest observations in the years 1937, 1956 and 1963 folded on Mannino's period. The light curve from 1954 is based on Mannino's observations.

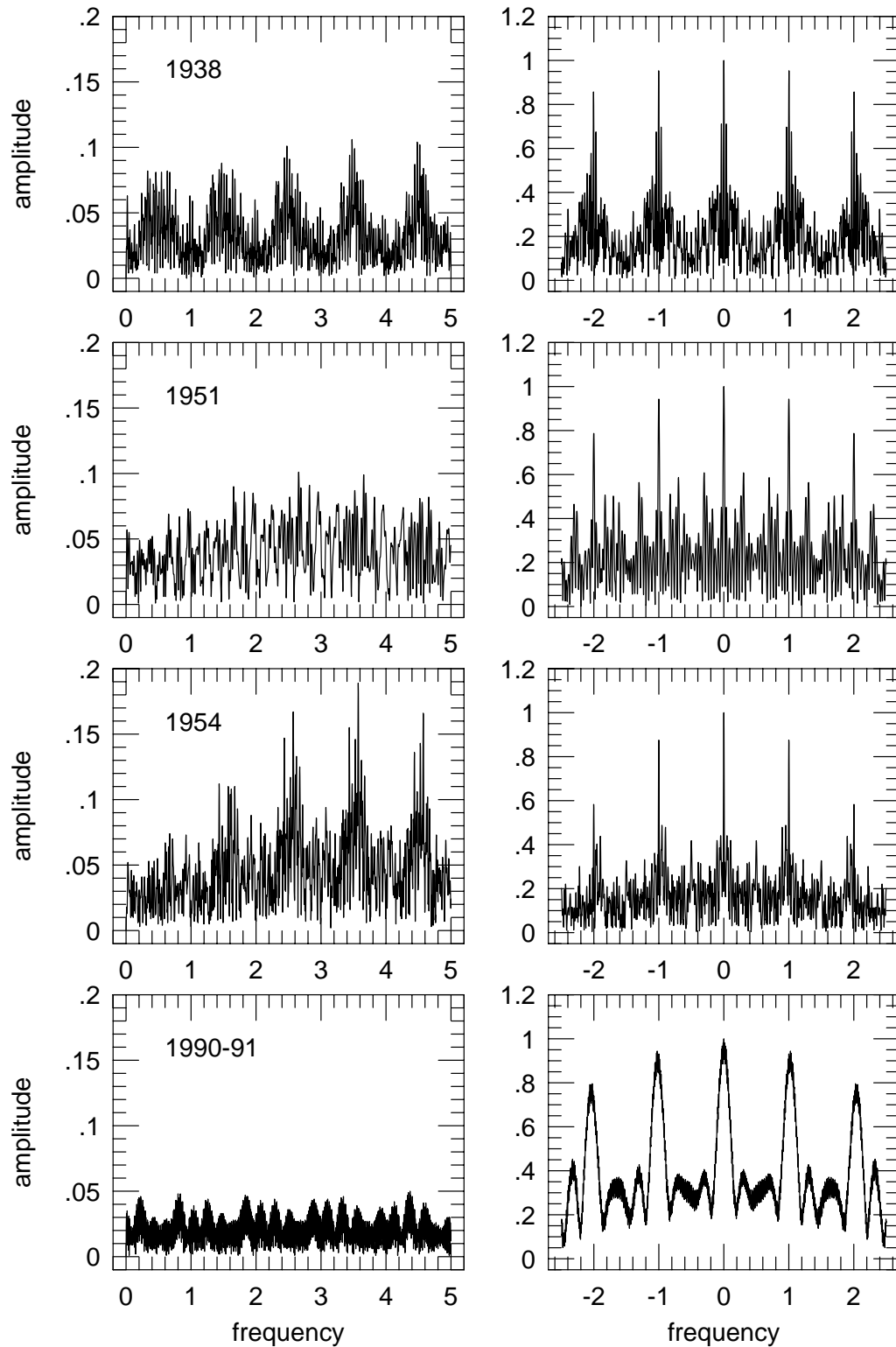


Figure 2. Amplitude spectra with their spectral windows from the years 1938, 1951, 1954 (from Mannino's data) and 1990-91.

In the years 1990 and 1991 the structure of the spectra in spite of the very low amplitude might indicate some oscillation inside the star.

Time and more accurate photometry can only solve the problem of this unique cluster member. It is suggested that the starting of pulsation has been caught.

This study was partly supported by Hungarian OTKA grant I-3-829.

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