WOLF-RAYET TYPE STARS HD 191765 AS POSSIBLE EVOLUTIONARY PRECURSOR OF LOW MASS X-RAY BINARY SYSTEMS

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At ShAO with the aid of 60-sm telescope

Apogee Alta U-27 1024x1024 pixels CCD matrix.

In V filter

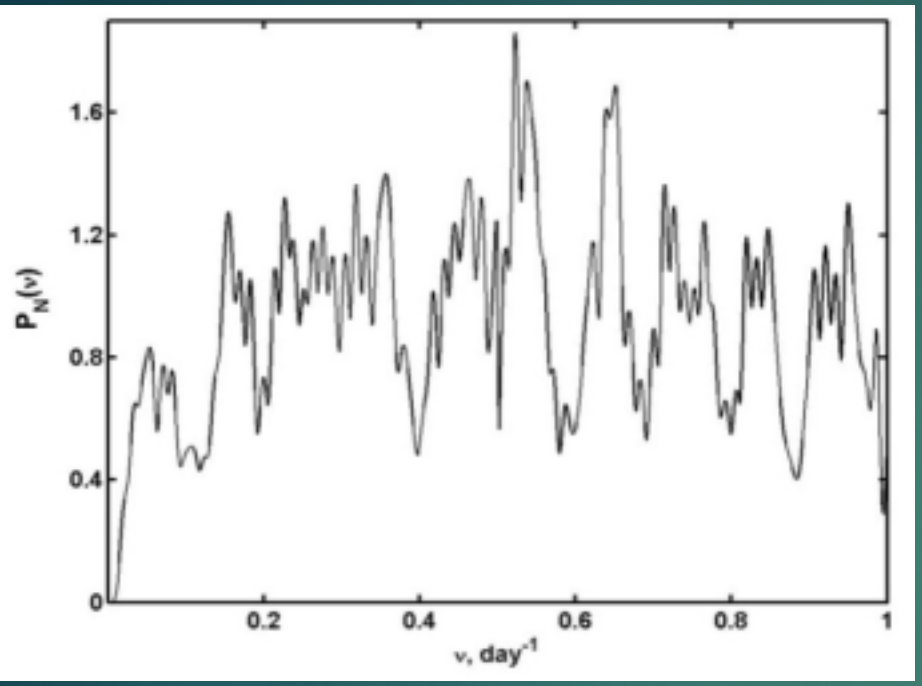
18 nights, with **100** to **300** measurements made each night.

The reference and control stars were **HD228063** (Sp=B8V, V = $8^m.60$) and

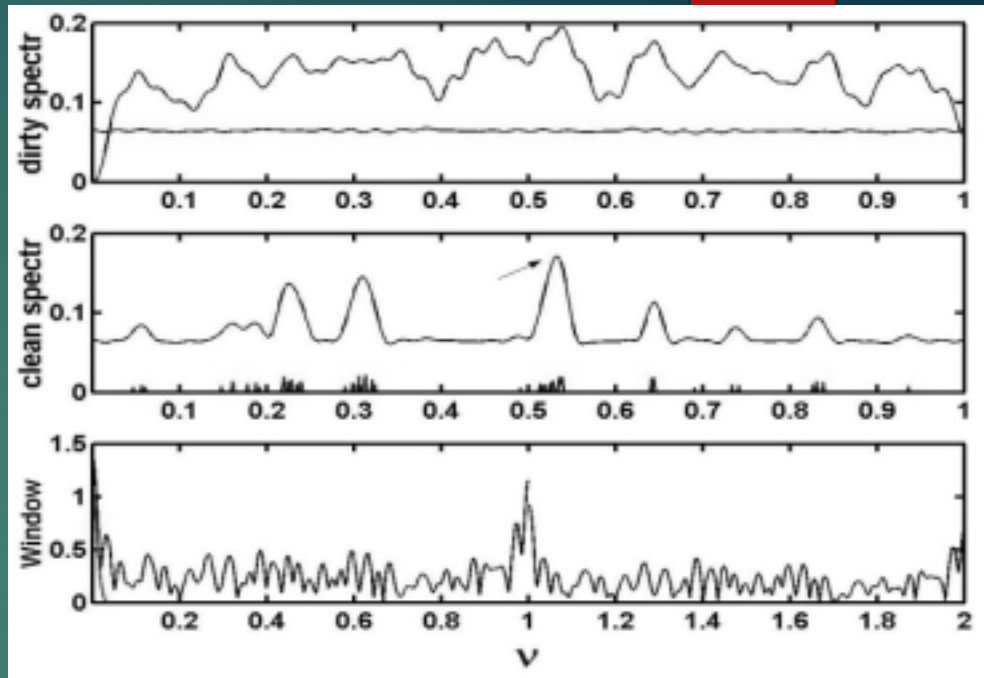
TYC 2683-1582-1 correspondingly

In obtaining and processing was used the MaxIm DL packeage program.

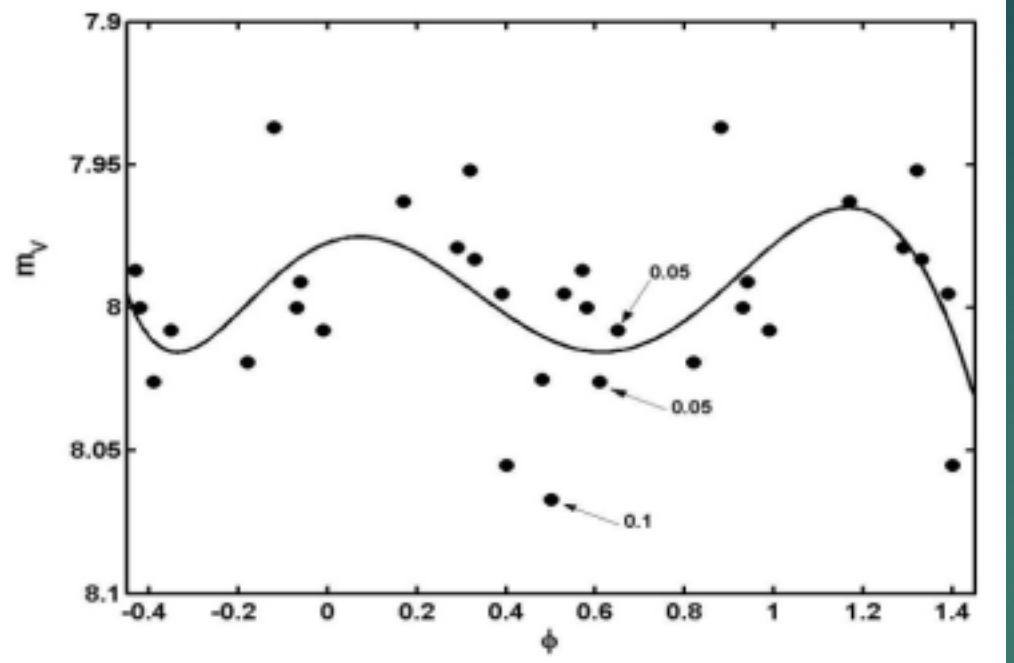
The duration of each observation is from **15** to **30** min on the different nights.



Fourier periodogram for the magnitudes of star HD 191765



Dependence of the amplitudes of the Fourier harmonics on the frequency ν for the dirty (top) and CLEAN spectra, and the spectral window for the array of magnitudes of star HD 191765 (bottom). The arrow indicates the position of the peak with the maximum amplitude in the CLEAN spectrum, to which the frequency $\nu = 0.530$ day^{-1} ($P = 1^d.887$) corresponds



Dependence of the magnitudes of star HD 191765 on the phase ϕ of the period P = 1^d.887. The arrows indicate phases in which fast photometric variability with the amplitudes of 0^m.1 and 0^m.005 were found. The solid curve is a fit of the observational data using a six-degree polynomial

CONCLUSIONS

After the end of the primary stage of common-envelope evolution, the WR + (K-M) system, consisting of a ” first-generation” WR star and a low-mass K-M companion was formed. It is possible that the peculiar star HD 191765 belongs to WR systems containing low-mass K-M companions.

The main conclusion of this article is that HD 191765 may be considered as possible evolutionary precursors of low mass x-ray binary systems. Further spectral and photometric observations of HD 191765 are of considerable interest.

THANK YOU FOR YOU ATTENTION