

# The Photometric variability of the WC9-type Wolf-Rayet star WR 103

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We discuss a collection of archival multi-colour photometric data of the variable WC9-type Wolf-Rayet star WR,103,=,HD,164270 observed over a time interval of eleven years. The photometric systems used are Walraven \$VBLUW\$, Bessel \$UBV\$ and StrÅ¶mgren \$uvby\$. The purpose is to search for periodicity and to disentangle continuum and line emission variations.

The star turns out to be stochastically variable in all time intervals under considerations. The time scale of the variations hovers between a few hours to a few days. The continuum light amplitude varies from  $\sim 0.1$  in the visual to  $\sim 0.2$  in the UV.

Emission-line variations at the level of

1--5% are detectable in all pass bands, but are largest in the StrÅ¶mgren \$b\$ and Walraven \$V\$ filters, due to the prominent presence of the C{sc iii} emission lines (blended with a much weaker O{sc ii} line) at 4650 and 5696,AA,emission lines, respectively.

The relative large light amplitude of WR,103 resembles that of WN8-type stars; a possible link between the two is discussed.

Stellar (multi-mode) pulsations are likely the cause of the photometric variability.

We also discuss the exceptional status of WR,103 within the class of WC9-type stars which are almost photometrically stable.

A striking phenomenon observed for the first time in WR,103: a three days lasting flux enhancement of the C{sc iii} line by at least 10% was observed in August 1998. Such strong spectroscopic flare-like events are very seldom observed in WR stars. So far, the one of WR,103 had the longest duration ever observed.

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