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V1162 Ori: A MONO- OR A MULTIPERIODIC HIGH-AMPLITUDE δ SCUTI STAR?

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The detection of the short-period variability of V1162 Ori was reported by Lampens (1985). The light curve of this high-amplitude δ Scuti variable star was first shown to be asymmetric (due to the presence of the first harmonic term) with a single periodicity of 0.078684 days and a half-amplitude of 0.09 mag in V. Poretti et al. (1990) re-observed V1162 Ori in order to investigate the possible presence of a second periodicity but concluded that they had no evidence for a second periodicity and that the star was pulsating monoperiodically. They refined the period to the value of $0.07868616 \pm 0.00000006$ days and also found a slightly larger half-amplitude of 0.098 mag in V.

New data have been obtained by Hintz et al. (1998). Apart from announcing a period break and a 50% decrease in the amplitudes of both terms related to the principal frequency the authors also suggested the appearance of a second frequency (corresponding to a periodicity of about 0.06 days) with a much smaller amplitude, i.e. comparable to the amplitude of the first harmonic term. This additional frequency was detected in their CCD data only (dataset 2) and not in the Strömgren magnitudes (dataset 1). From this, they inferred that V1162 Ori had changed from the single-mode to the double-mode regime.

Very recently Van Cauteren & Lampens (2000) reported the presence of a new δ Scuti star in the field of view of V1162 Ori, measured in the course of an intensive multisite campaign. This star, GSC 4778 324, appears to be a multiperiodic pulsator with a small amplitude (full amplitude of 0.014 mag at most) and a mean periodicity of about 0.07 days. Since it was also one of the brighter comparison stars (star no. 5) used in the reduction of the CCD differential data on V1162 Ori by Hintz et al. (1998), we conclude that the additional frequency found in the Fourier decomposition of the CCD data of V1162 Ori is entirely attributed to the variability of this comparison star. Both the period and the amplitude estimates are compatible with the the ones derived for the new variable star. Furthermore, also Arentoft & Sterken (2000) cannot support the finding of a second periodicity in their very recent paper on V1162 Ori.

Therefore, notwithstanding the other changes that may happen in this interesting δ Scuti star, our conclusion is that V1162 Ori was and still should be considered as a monoperiodic δ Scuti pulsator.

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