

The longest stellar dance inside a planetary nebula.

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Abstract

The importance of long-period binaries for the formation and evolution of planetary nebulae is still rather poorly understood, which in part is due to the lack of central star systems that are known to comprise such long-period binaries. Here, we report on the latest results from the on-going Mercator-HERMES survey for variability in the central stars of planetary nebulae. We present a study of the central stars of NGC 1514, revealed to be a highly eccentric binary system with a period of more than nine years, making it the longest known period central star to date. The morphology of the nebula shows the clear shaping influence of the binary in spite of its long period, highlighting that even wide companions can have a very significant impact on mass loss evolution. This study demonstrates not only the importance of wide binaries in late stellar evolution but also the importance of long-term monitoring campaigns which are only now possible due to modern high-stability instruments and queue mode observing. (See poster).