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Unexpected finding of a radio loud semiregular variable

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Abstract

Research in a given area of Astrophysics sometimes leads to unexpected findings in another. This has been our case when trying to identify compact radio sources of stellar nature that could be behind potential gamma-ray emitters. In particular, we focused our attention on highly reddened luminous stars with radio emission in an attempt to extend our previous searches involving unobscured candidates. Our methodology is mostly based on cross-catalogue identifications and use of multi-wavelength archive data. As a result, we came across the interesting star IRC-10412. Although it does not belong to the kind of targets we were looking for, we consider it worth to be reported here. In this contribution, we show that IRC-10412 belongs to the class of semiregular variables but exceeds by far the typical radio luminosities of these systems by two orders of magnitude. A tentative modeling of the observed spectral energy distribution is presented that allows us to estimate the mass-loss parameter of the powerful stellar wind needed to account for the unusual properties of this peculiar star.

My poster in zenodo.org can be found here