
Firsthand witnessing disk-formation around a Be star

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Abstract

We present here new extremely sharp images of the closest Be star Achernar, showing the disk-forming gas disk associated to the emission-line phase of the star, over a period of only 4 years. For that, we used the Very Large Telescope Interferometer (VLTI) and state-of-the-art imaging tools to reveal the existence of this faint (few %) and tiny (~ 2 stellar radii) disk. This is the first time such a disk-formation has been directly imaged in a Be star, directly confirming that the emission lines which form in the spectrum of Be stars periodically are correlated with the formation of an equatorial gas disk. Our model-independent size estimation of the H-band continuum contribution is compatible with the presence of a circumstellar disk, which is in good agreement with predictions from Be-disk models.

Keywords: Achernar, Be star, Disk formation, interferometric images

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