Unravelling the Vela clouds

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Abstract

The Vela complex is a region of the sky which contains several stellar and interstellar structures. Thanks to the Gaia data combined with near-infrared photometry, we are able to get a 3D view of the interstellar medium through the extinction distribution. In order to unravel the Vela structures, we mapped the extinction distribution in 3D using a Bayesian algorithm named FEDReD. We extracted the spatial location of clouds and cavities using the FellWalker algorithm. This allows us to obtain new distances, volumes and masses for numerous structures such as the Vela molecular ridge components and their spatial connection.

Keywords: Gaia DR2, dust cloud, extintionc map

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