

The spatial distribution of Cyg OB2 from *Gaia* DR2.

S. R. Berlanas^{1,2}, N. Wright³ and A. Herrero^{1,2}

¹ Instituto de Astrofísica de Canarias, 38200 La Laguna, Tenerife, Spain

² Departamento de Astrofísica, Universidad de La Laguna, 38205 La Laguna, Tenerife, Spain

³ Astrophysics Group, Keele University, Keele, ST5 5BG, UK

Abstract

A key difficulty in the study of Milky Way massive stars and OB associations has been the large uncertainty in their distances, hindering the comparison with theories of stellar and cluster evolution. The recent second release of data from the *Gaia* satellite has provided unprecedented high quality astrometry for more than 1.3 billion of objects, all of them with measured parallaxes. For the first time ever, we have explored the spatial substructure of the Cygnus OB2 association using parallaxes from the recent second *Gaia* data release. We used a Bayesian inference procedure to model the observed parallax distribution. Our analysis reveals a foreground group separated from the main Cygnus OB2 population. This result could unravel the internal kinematics and evolution of this massive star-forming region. (See poster).