

STUDY OF THE SIZE, ORIENTATION AND COLOUR OF BARLENSES

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The inner region of a high fraction of barred S0 and early-type spiral galaxies shows an interesting type of morphological structure called barlens [1]. This feature has been recently shown to be the more face-on counterpart of the boxy/peanut bulges that appear in edge-on galaxies by both simulations [2] and observations [3]. This fact links the barlens to the evolution of the bar and implies that they form a single structure.

We compare the size, orientation and colour of barlenses to the properties of the bars. Our sample of barlens galaxies is compiled from the Catalogue of the Morphological Features in the S⁴G [4] and the NIRS0S survey [1]. The size and orientation of the barlenses are estimated by fitting ellipses to points marked over a given isophotal level that describes the shape of the barlens structure. The size and orientation of the bars are taken from the respective catalogue. The colours of the barlenses and bars are obtained using SDSS ugriz-bands data from [5].

We find that the properties of the barlenses correlate strongly with the properties of the bar, giving additional observational support to the idea that barlenses form part of the bars and that they are the more face-on counterparts of the boxy/peanut bulges.

[1] E. Laurikainen, H. Salo, R. Buta & J. H. Knapen, 2011, [MNRAS 418,1452](#)

[2] E. Athanassoula, E. Laurikainen, H. Salo & A. Bosma, 2014, [arXiv:1405.6726](#)

[3] E. Laurikainen, H. Salo, E. Athanassoula, A. Bosma & M. Herrera-Endoqui, 2014, [MNRAS 444,L80](#)

[4] M. Herrera-Endoqui, S. Díaz-García, E. Laurikainen, H. Salo, 2015, [A&A 582,A86](#)

[5] J. H. Knapen, S. Erroz-Ferrer, J. Roa, et al., 2014, [A&A 569,A91](#)